# FEEDSTUFFS®

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 30—Number 43 | OCTOBER 25, 1958 | 1 Year $5, 2 Years $8


## "Only Gambler's Chance" for Cattle Feeding Profit Seen

URBANA, ILL.—Corn Belt farmers who have been buying feeder cattle this fall "have only a gambler's chance of making any profit for themselves," a University of Illinois farm economist said recently.

Prof. L. H. Simerl noted that farmers in the Corn Belt are investing around a billion dollars in feeder cattle this fall. However, he indicated, chances for profits are slim in view of feeder cattle prices and prospects for fed cattle prices.

The price outlook, he said, "calls for giving special attention to getting low-cost gains and preventing losses from diseases and accidents."

Following is Prof. Simerl's recent analysis of the cattle feeding situation:

"Farmers have been paying $25 to $30 cwt. for yearlings and $30 to $35 for calves. These prices are one fourth to one third higher than last year and the highest since the big bulge in 1951. In the fall of 1951, farmers paid over $30 for yearlings and around $40 for calves.

"Feeder cattle prices this fall are much higher in relation to the fat cattle market than they were in the

(Turn to CATTLE, page 97)

## Supersweet Plans New Iowa Mill

MINNEAPOLIS — Plans for construction of a new formula feed plant in northeastern Iowa have been announced by the Supersweet Feeds division of International Milling Co.

The site of the new mill will be at New Hampton, Iowa, a county seat town with a population of about 4,000.

Construction work will begin as soon as possible, said Malcolm B. McDonald, vice president and treasurer of the company. "The plant is being built to handle our rapidly expanding Supersweet business in Iowa," he said. "With this mill at New Hampton, we feel that we shall be in a position to provide the best possible service to our customers."

Production is expected to start March 30. The mill will incorporate all of the latest techniques in the manufacture of formula feed including bulk handling and storage of products, Mr. McDonald said.

The new plant will be located on five acres of property on the west side of New Hampton. It will have railway trackage and good roads for truck pick-up and deliveries, Mr. McDonald pointed out.

Supersweet's complete line of more than 60 poultry and livestock feeds will be produced and distributed by the mill.

This will be the firm's third formula feed plant in Iowa. Other mills are at Des Moines and Estherville, Iowa; Fremont and Grand Island, Neb.; New Ulm and Willmar, Minn.; Salina, Kansas, and Monmouth, Ill.

## FEEDSTUFFS *Features This Week*

**WAREHOUSING COSTS:** A comprehensive review of a USDA study in improving efficiency in handling sacked feeds appears on **page 28.**

**FEED FORMULATING:** An article on linear programming and how to solve feed mix problems appears on **page 36.**

**SWINE FEEDING:** A Michigan research project compares meal and pelleted feed with varying oat levels for swine. **Page 50.**

**MERCHANDISING:** An Iowa feed man explains how he meets ever increasing competition. **Page 78.**

### — REGULAR FEATURES —


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## Central Soya Reports Record Sales, Earnings For Past Fiscal Year

FT. WAYNE, IND.—Central Soya Co., Inc., and its feed division, McMillen Feed Mills, Ft. Wayne, Ind., reported the highest sales and earnings in its history for the fiscal year ended Aug. 31, 1958.

Net income after taxes amounted to $6,718,126, up 44% from $4,665,267 the year before. Based on 1,133,150 shares of capital stock presently outstanding, these latest earnings were equal to $5.93 a share against $4.12 in 1957.

Net sales were up 14.9% to a record $225,967,682, compared with $196,531,334 in the preceding year.

Earnings before income taxes were $13,887,354, as against $9,789,923 in 1957. Income tax provisions totaled $7,169,228 and $5,124,656 in the respective years.

Central Soya's feed division, McMillen Feed Mills, obtained the largest feed tonnage in its history, said Harold W. McMillen, chairman, and Dale W. McMillen, Jr., president, in their report to shareholders. "Good feed business resulted in an active demand for soybean meal which contributed to satisfactory processing

(Turn to CENTRAL SOYA, page 97)

## Prices of Broilers In Delmarva Drop To 15.4c Average

SALISBURY, MD.—Broiler prices slid still lower last week in Delmarva. The average price paid on the farm was 15.4¢, compared to 15.8¢ the week before. According to the Maryland-Delaware crop reporting service, the average price paid a year ago was 18.7¢.

Across the nation last week, hatcherymen in the 22 major broiler producing states set 37,586,000 eggs. This was 1% more than the previous week, and 13% above the corresponding week a year ago. Increases in the number of eggs set from the previous week were reported in 13 of the 22 states. Sharpest increases from the previous week occurred in North Carolina, Alabama and Indiana.

Broiler growers in the 22 states placed 25,820,000 chicks last week. This was 3% less than the previous week, but 8% above the corresponding week a year ago.

Delmarva producers started 3,088,000 broiler chicks during the week. This was 9% less than a week earlier and 6% below the corresponding week of last year. Settings were 4% less than the previous week, and 6% less than the comparable week last year.

## Merchandising, Bulk Handling Stressed at Michigan Meeting

By DON E. ROGERS
Feedstuffs Staff

EAST LANSING, MICH.—Bulk handling of feed and a greatly stepped up program of personal selling and service work to keep pace with the economic changes in agriculture were outstanding topics thoroughly discussed at the 25th annual meeting of the Michigan Feed & Grain Dealers Assn. held jointly with Michigan State University Oct. 16-17. About 200 delegates attended the business sessions in the Kellogg Center for Continuing Education.

As a sidelight to the bulk handling discussions, about a dozen manufacturers and distributors of bulk handling equipment set up an exhibit of machinery in the livestock pavilion on the MSU campus. The number of visitors to the exhibit indicated a lively interest in this fast-developing method of transporting and handling livestock and poultry feeds.

Robert B. McConkey, Durand (Mich.) Milling Co., was elected president of the Michigan group, succeeding Lawrence Smith, Smith Bros., Lake Odessa, who had served as president for two terms. Ed Bauer, Little Brothers, Kalamazoo, was chosen vice president. Ray Bohnsack, Farm Bureau Services, Lansing, was named financial secretary, and Nevels Pearson, East Lansing, was appointed executive secretary-treasurer.

New directors elected are Gary Marshall, Lansing (Mich.) Grain Co.; Walter Elser, Frutchey Bean Co.,

(Turn to MICHIGAN, page 101)

## Cottonseed Support Plan Set by USDA

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — A broad price break in cottonseed in Texas this week caught Commodity Stabilization Service officials off balance in their theory that their price support program for cottonseed would not become operative this year.

During the past week as the cotton harvest proceeded rapidly in Texas, the price of cottonseed broke by approximately $5 ton across the state.

USDA has now come out with an implemented price support program for cottonseed which is basically as follows: Where any person pays the producer $41 per ton for seed, he may tender that seed to the government at $45 per ton on a purchase and immediate re-sell basis at the same price; USDA will agree to buy the oil content of the quantity of seed at the lowest offering price of that day to CCC, and the processor will retain to his account the meal, hulls and lint from that crush.

**A Surprise**

This program is not new but is a surprise since neither the trade nor USDA had expected that the cottonseed market would break so badly.

(Turn to COTTONSEED, page 97)

## Integration, Contract Farms Big Challenges, G.L.F. Members Told

SYRACUSE, N.Y.—Economic integration and contract farming may be the biggest challenges facing farmers in the years ahead, members of farmer-owned Cooperative G.L.F. Exchange, Inc., were told here recently.

Speaking during the opening session of the 38th G.L.F. stockholders' annual meeting, both G.L.F. president J. C. Corwith and general manager Edmund H. Fallon said the need is for farmer control of integration and contract farming.

Controls can be kept in the hands of farmers by working through their own organizations, the speakers said.

Himself a farmer with a 255-acre poultry, potato and grain farm on Long Island, Mr. Corwith told the 3,000 G.L.F. stockholders and employees at the meeting, "We have no choice except to meet the demand of the consumer for food that is conveniently packaged and of uniform quality."

Currently, contract farming, or integration, is a growing trend in the livestock industry, Mr. Fallon pointed out. In integration, buyers of farm products contract to buy a farmer's produce, if the farmer meets specifications set up by the buyer. Credit for supplies the farmer needs is often part of the contract.

"Through their cooperatives farmers can direct the development of in-

(Turn to G. L. F., page 97)

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**The regional circulation of this issue is concentrated in the southwestern states**


## Quality Control

**GREETINGS, READER,** wherever you are. If we were to make a few guesses as to your whereabouts, and if you are with a large feed manufacturing concern, we'd say your desk is in the middle of the purchasing department, in the corner of a laboratory or up a couple of stories where the desks are farther apart and insulated with some carpeting.

If your company is one of the smaller ones, we'd say your spot is back in the corner behind the bookkeeper and next to the window overlooking the loading dock. Or maybe you are leaning on the counter, getting ready to sort through the rest of the mail.

You could be in any number of places, because the occupations within the feed industry are varied, and reading time must be found whenever and wherever you can if you want to keep up with what's going on in the feed business. You may be on an airplane. You may be in bed. (Believe it or not, we have had some complaints from wives of feed men about this.)

It is not necessary, however, to elaborate on who or where you are now that we can make this point: You may have one or more of several important responsibilities within the feed industry, but in one respect you are like all the others who flipped to this page today. You are a reader, which for people like ourselves in the publishing business makes you a favorite type of individual, indeed.

**WE HAVE SINGLED YOU OUT,** grouped you and singled you out again for the special purpose of saying "thanks" for being there. You have made something possible for Feedstuffs that we consider a very significant achievement in the business paper publishing field, and we want you to know we appreciate it.

Perhaps you have noticed the emblem surrounded by the small type up above. It first appeared there several weeks ago, and just to make sure everyone sees it, this week we are displaying a larger reproduction along with this message.

The ABC is the official mark of the Audit Bureau of Circulations. And as the first letters of the alphabet should, ABC stands for something basic, for orderliness and for quality.

The Audit Bureau of Circulations is a voluntary, cooperative and nonprofit association, founded in 1914 by advertisers, advertising agencies and publishers to make dependable and meaningful reports of circulation available to buyers of advertising space. To qualify for membership a publication must meet specific standards for paid circulation established by ABC. Its records and procedures are carefully audited periodically. ABC has been referred to as the "bureau of standards" for relations between buyers and sellers of advertising space.

Membership in ABC at present includes 786 advertisers, 265 advertising agencies, 1,292 daily newspapers, 785 weekly newspapers, 69 farm publications, 285 magazines and 356 business publications covering a variety of industries. The growing number of business publications submitting to audits of their circulation marks a significant "quality control" effort on the part of these publishers.

**IT IS EASY TO UNDERSTAND WHY** this ABC "bug" is important to Feedstuffs and its customers. The information available to space buyers on circulation reports is to them what the analysis report on a feed ingredient is to a feed buyer. It tells them with certainty what we are delivering to them in terms of numbers of readers, kinds of readers and where the readers are located, in percentages and by volume.

We sincerely believe that this alphabetizing is important—and rightly so—to you, too. Our aim is to keep you sufficiently interested in what we report to retain you as a reader year after year. And with your help we will muster all the skill and intelligence that we can to make this ABC beginning take you all the way through to the XYZ of what is happening in the feed business.

# A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

**Formula feed business continued to be better than a year ago during the past week. And while reports were spotty, there was indication that seasonal increases are showing up in beef, dairy and laying feeds. Areas reporting slower business said warm weather, good pastures and/or the busy fall farm season have reduced demand. Optimism prevails for continued good business into the winter. The index of wholesale feedstuffs prices dropped 2.5 points to 76.7, the U.S. Department of Agriculture reports. This was still 3.7 points above the same period a year ago. The feed grain index fell 3.5 points to 61.3, which is 6 points below the same week a year earlier. The hog-corn ratio based on Chicago prices was up .4 of a point from last week to 15.8. This compares with 14.3 a year ago. (Ingredient price details on pages 98-100.)**

### Northwest

Feed business appeared to be quite spotty during the past week. Reports on feed sales ranged all the way from "off 50% from last week" to "a very good increase over a week ago."

Those with slower business said the busy farm season and the falling prices apparently have curtailed demand. Those with improved business said dealers have been short on inventories and are finally making some commitments. Bookings for future delivery are better than they have been earlier in the month, but are still fairly light.

Those with improved demand said it has strengthened primarily in dairy, beef and layer feeds. Beef business, particularly, showed improvement. Turkey business is rapidly fading away, while hog feeds are moving at about the same pace as the past two or three weeks.

Representatives of mills with lower demand said all types of feeds are off.

The increase in demand for seasonal feeds, however, was indicated by an advance in millfeeds. Processors said inventories apparently have been strictly hand to mouth and that feed business apparently has improved enough to send the price upward.

Mills are operating the same number of shifts as the previous week, but have either extended or curtailed the number of hours according to their needs.

Price lists for next week are expected to be unchanged to down as much as $2, representatives said.

### Southwest

Mills are humming away at a merry pace in the Southwest this week as formula feed sales volume continues good. Running time ranges from five to seven days, with the average being about 5½ days, two shifts. Order backlogs are practically non-existent for some mills while other mills report two or three days. With few exceptions, sales departments report that business is as good or better than last week.

Prices are mentioned as a factor that has stimulated more orders in certain cases. Dealers who had let their inventories dwindle while prices were high have now been looking at lower prices for several weeks and are more inclined to stock up. Those who are convinced prices are at a good level are also selling harder to farmers and the result is an accelerated movement of feed. It is also thought that farmers have completed harvest chores and are now spending more time looking after livestock.

Hog and pig feeds continue to be leading items. Egg feeds are moving well although not in a spectacular manner. Range and feedlot rations for cattle are meeting with better demand all the time. Pastures are tending to dry up and feeders are bringing steers into drylot to feed them newly harvested corn rather than sell it at the low prevailing prices.

Turkey feeds are fading out of the picture gradually as more birds go to market. Broiler tonnage holds about steady, despite low finished bird prices. Dairy feed is moving fairly well.

Price lists are expected to be down 50¢ to $1 for next week. Vegetable and animal protein prices are lower, but millfeed is higher. Possibly low protein feeds may be unchanged.

### Northeast

Consumers still are working off apparently ample inventories because sales of formula feed continued to give ground.

Laying mashes were well taken and broiler feeds bulked large in the tonnage. Milk makers led the individual dairy items, but if all of the concentrates were lumped together they would approximate milk makers in tonnage.

Demand for eggs in the western New York area was moderate, with extra large sizes bringing 63@68¢ doz., and most sales at 64@66¢. The market was steady and supplies were barely adequate-to-short for larger sizes, ample to slightly excessive for mediums and adequate for small sizes.

The live poultry market was dull in the same area, supplies were liberal-to-heavy and the demand was slow. Broilers and fryers were quoted at 17@19¢ lb.

The ingredient market was fairly firm. Wheat feed and nearby soybeans firmed up. Linseed oil meal was strong, distillers' grains eased and meat scraps turned slightly stronger.

Demand from medium and large mixers strengthened millfeeds and prices moved higher.

Running time of formula feed manufacturers averaged about 40 hours last week.

### Southeast

Feed business is reported to be steady to good, according to most of the trade. Broiler feeds are moving well in spite of the fact that broiler prices in north Georgia have decined to the 14¢ lb. level. This is a 1¢ drop for the week, and it is making it increasingly difficult for the feeder to realize even a small profit.

Dairy and cattle feeds are reported to be good with some mills in the section on a 24-hour running time basis and reporting that feed volume is as good as that reached during the severe winter of last year.

Baby chick placements in the north Georgia broiler producing sectien have increased slightly for the last three reporting periods after a steady decline prior to that. Price predictions are still of a pessimistic nature insofar as broilers are concerned. Supplies of southeastern-produced shell corn have been on the tight side and trading has been in heavy volume at increased selling prices. However, it is expected that midwestern production which will move in the territory in the immediate future in barge load lots should change this situation considerably.

Some ingredient markets advanced this week, mostly on the strength of

(Turn to MARKETS, page 102)

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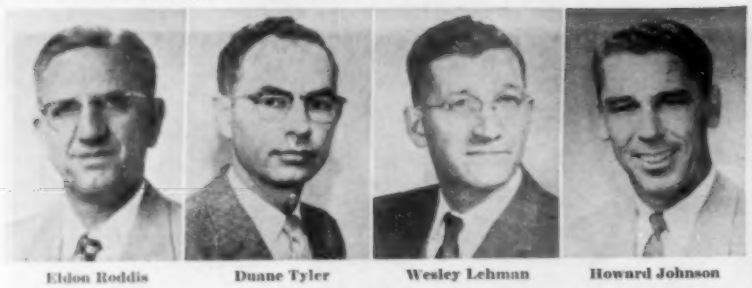

Eldon Roddis | Duane Tyler | Wesley Lehman | Howard Johnson

**SMALL MILL SHORT COURSE—To be held in connection with the Feed Production School in Kansas City this year is a Small Mill Short Course, for custom millers, concentrate mixers and small mill operators. The main school will take place Nov. 12-14 at the American Royal Bldg. in Kansas City, with the one-day short course on Nov. 14. Pictured here are some of the feed and machinery men who will be on the short course program—Eldon Roddis, Roddis Feed Co., Rochester, Minn.; Duane Tyler, Reid-Strutt Co., Portland, Ore. (both covering receiving, storage and preparation of ingredients); Wesley Lehman, McMillen Feed Mills, Ft. Wayne, Ind. (mixing), and Howard Johnson, Richardson Scale Co., Atlanta (packing, storing and shipping). The short course will cover all phases of small mill operations, with talks, discussions and live demonstrations. The school and short course are sponsored by the Midwest Feed Manufacturers Assn., Kansas City.**

## URGE EARLY PRODUCTION SCHOOL ENROLLMENT

**KANSAS CITY — Feed men planning to enroll in the 1958 Feed Production School in Kansas City are being urged to send in their registrations as soon as possible. The school will be held Nov. 12-14 at the American Royal Bldg. in Kansas City, with a special Small Mill Short Course for small mill operators running concurrently with the regular school on Friday, Nov. 14. Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn. (sponsor of the school), noted that all enrollment is by advance registration. He encouraged feed men to enroll now for the best hotel accommodations and other arrangements. Registrations must be made by Nov. 7, he said, so that provision can be made to take care of the large attendance expected. Enrollment and arrangements for hotel accommodations are made through the Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City, Mo.**

## *State Figures On Cattle Listed*

WASHINGTON—Some of the details from the recent U.S. Department of Agriculture report on numbers of cattle and calves on feed on Oct. 1 are shown in the accompanying table.

As reported previously (Feedstuffs, Oct. 18), the number of cattle on feed in 13 major feeding states on Oct. 1 was estimated at approximately 3.6 million. This represented an increase of 12% over a year earlier.

**Cattle and Calves on Feed in Selected States***

| State | Oct. 1, 1957 | July 1, 1958 | Oct. 1, 1958 | Oct 1, 1958 as a % of Oct. 1, 1957 |
|---|---|---|---|---|
| | —1,000 head— | | | % |
| Ohio | 94 | 115 | 90 | 96 |
| Indiana | 142 | 180 | 118 | 83 |
| Illinois | 365 | 491 | 372 | 102 |
| Minnesota | 190 | 297 | 205 | 108 |
| Iowa | 785 | 1,189 | 911 | 116 |
| Missouri | 144 | 189 | 147 | 102 |
| So. Dak. | 105 | 181 | 141 | 134 |
| Nebraska | 366 | 457 | 443 | 121 |
| Kansas | 166 | 153 | 222 | 134 |
| Nine N. C. states | 2,357 | 3,252 | 2,649 | 112 |
| Texas | 87 | 104 | 106 | 122 |
| Colorado | 181 | 234 | 228 | 126 |
| Arizona | 127 | 139 | 135 | 106 |
| California | 459 | 534 | 474 | 103 |
| 13 States | 3,211 | 4,263 | 3,592 | 112 |
| Oklahoma | ** | 24 | 23 | ** |

*Estimates include only cattle being fattened for market as a more or less distinct agricultural enterprise, and exclude small operations incidental to dairy and general farming. Cattle thus fed are presumed to produce carcasses that will grade good or better.
**Not available.

### ADDS SALES SPACE

PLAINVIEW, MINN.—A 30 by 48 ft. addition to the Plainview Cooperative Creamery Feed Store is under construction. It will be used for storage and sales room.

## *Feed Men from Wide Area to Attend School*

KANSAS CITY — Feed mill men from a wide area are planning to attend the annual Feed Production School to be held Nov. 12-14 at the American Royal Bldg. in Kansas City.

The Midwest Feed Manufacturers Assn., sponsor of the school, reported this week that advance registrations received so far have come from 35 different states, plus Canada and South America.

It was pointed out, too, that Dr. Lloyd Washburn of Colorado State University is bringing 25 students in a feed technology class to the school. Also, students in the feed tech program at Kansas State College are expected to attend.

The three-day production school program will be devoted to bulk handling of finished feed, plus specialized sessions on various phases of feed mill operation. There also will be a special Small Mill Short Course on Nov. 14. Program details were announced previously. (Feedstuffs, Oct. 11.)

Since the school is being held in the big American Royal Bldg., transportation between hotels and the building will be provided at specified times.

In addition to the three-day school, arrangements have been made for all machinery used in demonstrations to remain in the American Royal Bldg. on Saturday, Nov. 15, so that enrollees who wish to do so may stay over and see the equipment further.

## Expansion Planned by Minnesota Feed Firm

ST. PAUL, MINN. — An expansion program that will increase warehouse space and step up feed production at Northwest Cooperative Mills, Inc., St. Paul, has been announced by A. H. Roffers, general manager.

The feed and fertilizer firm will increase storage space by 930 tons and will step up feed production 15% by revamping its bagging and handling facilities, according to Mr. Roffers.

Three regional cooperatives—Farmers Union Central Exchange, Midland Cooperative, Inc., and Central Cooperatives, Superior, Wis.—own the company.

Present storage capacity for feed is 550 tons, a two-day truck supply. A new 74 by 195 ft. warehouse will increase storage space to 1,480 tons, en eight-day supply, Mr. Roffers said. Work is expected to be completed in mid-December.

Plans also call for the installation of eight 10-ton and eight 20-ton bulk loading bins. Construction of these units will begin about Nov. 1.

New bagging machines for both soft feed and feed pellets will increase the speed of packing and will insure uniform weight, Mr. Roffers said.

## Speakers Named For Annual Florida Nutrition Meeting

MIAMI, FLA. — Education and pleasure will be combined in the Florida Nutrition Conference which will be held aboard the S.S. Florida on a cruise from Miami to Nassau, British West Indies, Oct. 31-Nov. 1.

Three sessions will be held—one the afternoon of Oct. 31; another from 8:30 p.m. to 10 p.m. that night, and the final session the following morning.

Florida Agricultural Experiment Station workers and industry representatives will present the program. Speakers and their subjects are as follows:

T. J. Cunha, head of the department of animal husbandry and animal nutrition at the University of Florida, "The Experiment Station and the Feed Industry;" G. E. Combs, Florida, "Protein Supplements for Swine;" J. T. McCall, Florida, "Effect of Protein Level on Mineral Requirements;" Carl B. Bender, Sperry Rand Corp., "Production and Preservation of a Winter Roughage Supply," and "Zero Pasture vs. Grazing;" Ralph P. Soule, Chas. Pfizer & Co., Inc., Terre Haute, Ind., "The Present Status of Tranquilizers and Antibiotics."

Also, H. D. Wallace, Florida, "Recent Developments in Swine Nutrition;" George K. Davis, Florida, "Mineral Nutrition in Ruminants;" Sidney P. Marshall, Florida, "Roughage-Grain Ratio in Cattle Feeds;" R. M. Bethke, Ralston Purina Co., St. Louis, "Current Practices in the Use of Fats in Livestock and Poultry Feeds;" Ralph McCall, Quaker Oats Co., Chicago, "Recent Developments in Beef Cattle Nutrition;" Robert H. Harms, Florida, "Factors Affecting Protein Requirements of Laying Hens."

Also planned are two panels. One will cover antibiotics, arsenicals, coccidiostats and vitamins, and the other will be a nutrition roundtable. Members of the panels will include speakers and Florida Agricultural Experiment Station personnel.

## George E. Fuhr Heads Chicago Feed Club

CHICAGO—George E. Fuhr, Spencer Kellogg & Sons, Inc., Chicago, is the new president of the Chicago Feed Club. He was elected at the regular monthly dinner meeting of the organization Oct. 17 at the Congress Hotel here. Around 60 members and guests attended.

Mr. Fuhr and other new officers will be installed at the next meeting, set for Nov. 21 at Algauer's Castle Room. Other new officers are: Don L. Huffman, Nellis Feed Co., vice president; Charles H. Hubbell, feed consultant, treasurer, and William E. Huff, Morton Salt Co., secretary. New directors are Bill R. Edwards, Darling & Co., and Oscar H. Mindrup, Dawe's Laboratories, Inc.

Gladwin A. Read, Gladwin A. Read Co., was chairman of the nominating committee. Serving with him were John J. Zima, Kraft Foods, and E. G. Young, Illinois Farm Supply Co., past presidents.

Guest speaker for the evening was Howard Gramlich, Chicago & Northwestern Railway, who talked on "Problems Created by Our Phenomenal Population Increase." He was introduced by E. D. Griffin, Allied Mills, Inc. Mr. Gramlich showed how the U.S. population of 175 million, which is expected to reach 200 million by 1967, produces land and water problems. There may come a time, he says, when our surpluses melt and productive land will not be ample to meet food requirements. Land is diminishing because of new suburbs, toll roads, airports, parks, golf courses, parking space, shopping centers and other needs.

## *Report on Studies Of "Water-Belly" Disease Factor*

WASHINGTON—Scientists do not yet have the final answer on the identification of the compound which caused the "water-belly" disease in broilers last fall, but they have been conducting intensive studies which provide considerable information on the possible nature of the toxic material.

This was brought out in a discussion of the chicken edema disease factor at the recent meeting in Washington of the Association of Official Agricultural Chemists. Three technical papers on studies of the disease factor were presented. W. B. Brew of the Ralston Purina Co., St. Louis, presented a paper prepared by scientists with Purina, Procter & Gamble Co., Quaker Oats Co. and Central Soya Co. Food and Drug Administration studies were outlined in a paper presented by Dr. Leo Friedman. And Dr. J. C. Wootton of Procter & Gamble's Miami Valley Research Laboratory told of some of the chemical characteristics of the disease factor.

Mr. Brew first told how broilers had died in alarming numbers in the fall of 1957 in central and eastern areas from a condition called "water-belly" or edema. It was found that feed grade animal fat, purchased from specific sources, was the only ingredient common to the feeds involved. It was later learned that all supplies involved use of products from special fat processing operations. These products had not been present in feed grade animal fat during the period of testing which preceded acceptance of animal fat as a feed ingredient.

The papers on work which has been done to identify the toxic factor showed that there have been 3,000 to 10,000-fold concentrations of the original toxicity, but the exact chemical nature of the compound is not yet known.

Initially, Mr. Brew noted, much of the research was on known toxic materials, but this showed that the condition was not caused by these ma-

(Turn to STUDIES, page 97)

## Cyanamid to Sponsor Poultry Conference

NEW YORK — Some 130 poultry pathologists representing 42 states are expected to attend the fifth annual Poultry Conference sponsored by American Cyanamid Co., New York, at Bear Mountain (New York) Inn, Oct. 27-29, Dr. L. M. Skamser, manager of technical service, has announced.

Several papers on poultry disease problems will be presented. The program will include discussion of nutrition, prevention and control of disease and recent advances in diagnostic procedures.

Among the speakers who will address the group are: Drs. Martin Sevoian and Henry Van Roekel of the University of Massachusetts; Drs. Henry Adler and L. G. Raggi of the University of California; Drs. Malcolm Peckham and Julius Fabricant of Cornell University; Drs. Sam Schmittle and D. Morris of the University of Georgia; Dr. M. S. Cover of the University of Delaware; Dr. Erwin Jungherr of the University of Connecticut; Dr. Damon Shelton of West Virginia University and Dr. S. A. Edgar of Alabama Polytechnic Institute.

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# NEPPCO Exposition Stresses Started Pullets, Integration

HARRISBURG, PA.—Started pullets and integration, two of the most talked about developments in the poultry industry, were the subjects of panel discussions at the Northeastern Poultry Producers Council annual exposition held here recently.

The discussions were part of a program which stressed the problems arising from the trend to larger and fewer poultry operations and the reasons for this trend.

More than 5,000 persons attended the three-day meeting which included educational sessions, commercial exhibits, banquets, women's and youth activities and other events.

The large turnout was told, by panel members that integration is here to stay, but the outlook for started pullets wasn't quite as clear cut, according to experts discussing this trend.

Milton Dunk, editor of the Poultry Tribune and panel moderator, said an increase in the started pullet trend will depend on two key factors: the economics of buying started pullets vs. producing one's own replacements and how well disease problems are licked.

His estimate was that purchases of started pullets will increase 75 to 100% this year over 1957 in the states in which NEPPCO operates. But he said some observers believe that egg producers are taking another look at the started pullet business, figuring they can cut their pullet costs if they do their own rearing.

**Interest May Wane**

"Interest in started pullets may wane as the margins for egg producers become narrower," he said. "Others think there is too much speculation in started pullets now and that they can trigger over-expansion in egg production. A person may decide to go into egg production this week, build a house next week, and with started pullets can be producing eggs by the end of the month."

On the other hand, many people now regard the started pullet business as another step toward a higher degree of specialization in egg production, and that started pullets are here to stay, he said.

A. Howard Fingar, Sunnybrook Poultry Farms, Inc., Hudson, N.Y., said the disease scare in started pullets is now groundless.

"Six years ago," he said, "we took out what is known as a product liability insurance policy. It protects both the customer as well as ourselves in this manner: If we deliver an order of started pullets to a customer who has other poultry on his place and this other poultry was to come down with some disease which the owner thought had been brought into his place in making delivery of his order of started pullets, the insurance company would protect this customer as well as ourselves.

"During the six years we have carried this policy, we have never presented to this insurance company a claim of any nature, and neither have any of our customers. During that period we have delivered to our customers well over 1 million started pullets."

Mr. Fingar said his firm makes it easy for the producer to buy started pullets. The firm wants the customer to see the stock it is growing and then to make a 10% deposit—no contract. The customer can inspect the pullets on delivery and can even turn them down if they aren't what he thinks they should be.

**Integration**

Discussion of integration in the poultry industry proceeded from a point of view that it is an economic fact of life with which the poultry producer must either contend or cooperate.

Dr. A. William Jasper, egg promotion director for the Poultry & Egg National Board, said integration is at least partially the result of a revolution in retailing. The buyer for the chain retailer could get volume from many small, independent producers, but he can't get it efficently nor can he get uniform quality.

The only way to get that large volume of uniform quality, according to many people in the poultry industry, is through "production control," Dr. Jasper said. This has led to integration and contract farming.

Dr. Kenneth Hood, American Farm Bureau Federation, Chicago, called for freedom of both the integrated and the independent poultryman to operate within the industry.

"Some would slow the growth of vertical integration in agriculture by the enactment of restrictive legislation. This is unwise," he said. "If

(Turn to NEPPCO, page 102)

## A. E. Staley Plant Resumes Production

DECATUR, ILL.—The A. E. Staley Manufacturing Co.'s Painesville, Ohio, plant resumed production Oct. 16, five weeks after a dust explosion and fire shut down soybean processing there Sept. 8.

Thomas Longbons, manager of the plant, said some repair work remains in the soybean preparation building, but full production would be reached very soon. A new building to house office, laboratory and utility facilities destroyed in the half-million-dollar explosion is planned for early construction, Mr. Longbons said.

Three employees received minor injuries in the explosion, and one was hospitalized. The plant processes soybeans for meal and oil.

**CONFERENCE DISCUSSION—Shown in a discussion about the program at the recent Texas Nutrition Conference (a report on the conference appears on page 90) are (left to right): G. M. Watkins, dean of the Texas A&M College School of Agriculture; W. D. Nusbaum, Ralston Purina Co., Ft. Worth; Ben E. Schmitt, Texas Feed Manufacturers Assn., Ft. Worth, and Dr. R. D. Lewis, director of the Texas A&M College Agricultural Experiment Station. The conference was held at Texas A&M College, College Station.**

## General Mills Millfeed Sales Office Moved

MINNEAPOLIS—Millfeed sales of General Mills, Inc., formerly handled by the company's Chicago office were transferred to the Minneapolis office as of Oct. 20, according to John Branston, manager of company millfeed sales. J. D. Anderson, millfeed sales executive in Minneapolis, will be in charge of the expanded operations.

Mr. Anderson said that transfer of millfeed sales activities to Minneapolis was made to increase merchandising efficiency. To assist with the increase in activity at Minneapolis, the department has added to its millfeed sales staff Dave Murphy, a 1958 graduate of the College of St. Thomas, St. Paul.

William Judge, who handled Chicago millfeed sales until the transfer of operations, has moved to GMI's Chicago manufacturing department.

## Norman Glass Named To Allied Mills Post

CHICAGO — The appointment of Norman R. Glass, Trenton, N. J., to the position of assistant to the general purchasing agent for Allied Mills, Inc., Chicago, has been announced by R. H. Griffiths, general purchasing agent.

Mr. Glass is a graduate of Rutgers University with a bachelor's degree in dairy husbandry and a master of science degree in agricultural economics. He has been in Dairy Herd Improvement Association work, has served as an agricultural agent and has been a field serviceman for a feed firm. During the past 12 years he has served in many different capacities with the Farmers Cooperative Assn. of New Jersey with special emphasis on ingredient and grain procurement.

Mr. Glass will be located in the general offices of Allied Mills. He replaces Don R. Rose, who resigned recently.

## Announces Patent On Potentiating Antibiotics in Feed

TERRE HAUTE, IND. — A patent recently issued to Chas. Pfizer & Co., Inc., opens the door to increasing the effectiveness of certain antibiotics in feeds for better control of poultry and livestock diseases, a Pfizer spokesman said this week.

Dr. W. M. Reynolds, assistant director of Pfizer's agricultural research center at Terre Haute, announced that the patent (U.S. Patent No. 2,855,340) covers the use of terephthalic acid—described as an effective "potentiator" of antibiotics—in combination with all tetracycline-type antibiotics in formula feeds.

He said the patent follows several years of research showing that the effectiveness of antibiotics can be improved by lowering calcium levels in a ration or by adding terephthalic acid.

**Increases Level in Blood**

"Either method of potentiation has the effect of increasing the antibiotic level in the blood," Dr. Reynolds said. "In combination, blood levels are higher than when either potentiating method is used alone.

"Based upon our present knowledge, proper application of these methods can give antibiotic blood serum levels in poultry more than 100% greater than levels possible from unpotentiated diets."

It was noted that longtime Pfizer tests with poultry in studies of ways to increase the effectiveness of antibiotics were first reported in August by the research center's director, Dr. Herbert G. Luther. (Feedstuffs, Aug. 2.) He and his associated Pfizer scientists had reported that of several methods found to enhance antibiotic usefulness, the most economical one appeared to be the altering of the level in the ration of certain elements such as calcium and phosphorus.

Dr. Reynolds said the additional findings that terephthalic acid further increased this antibiotic efficacy when added to rations resulted in the recent patent received by Pfizer on this application.

**More Tests Needed**

"More broad-scale practical tests must be conducted before any definite recommendations should be made," he said. "But due to the very great implications these findings have for the future of our poultry industry, we feel that it is to everyone's benefit that feed manufacturers and researchers be advised of current findings."

The Pfizer spokesman said that the influence of terephthalic acid on serum levels has been studied both in normal poultry diets and in those in which calcium and phosphorus have been adjusted. He said these studies show, in general, that both Terramy-

(Turn to POTENTIATING, page 102)

**ANRC OFFICERS—Officers and members of the board of trustees of the Animal Nutrition Research Council are shown here in pictures taken at the ANRC's recent meeting at the Shoreham Hotel in Washington. (Feedstuffs, Oct. 18) Left to right in the first photo are Dr. Walter Glista, Wirthmore Feeds, Waltham, Mass., the new chairman; Raymond N. Allen, New England By-Products Corp., Boston, board member; Dr. David Green, Merck & Co., Rahway, past chairman, and Dr. Laura M. Flynn, University of Missouri, Columbia, board member. In the second photo are Dr. Hartley W. Howard, The Borden Co., New York, board member; Arthur DeVincentis, Merck & Co., Rahway, the legal counsel; Dr. J. A. Campbell, Canadian Department of National Health and Welfare, Ottawa, board member, and Dr. Leo Friedman, Food and Drug Administration, Washington, board member. In the third picture, Irwin Olcott (right), Dawe's Laboratories, Chicago, who was reelected secretary, is shown with Dr. Harold Wilcke, Ralston Purina Co., St. Louis, who presided at one of the ANRC sessions.**

## Washington Animal Industry Meeting Scheduled Nov. 7

SEATTLE — Washington's annual Animal Industry Conference is scheduled for Nov. 7 at Lower Columbia Junior College, Longview, Wash.

It is being sponsored by the Washington State Feed Assn., Inc., the State College of Washington and Lower Columbia Junior College.

First speaker on the program will be Dr. I. A. Dyer, department of animal science at Washington State College. He will tell about new information on bloat. Following his talk, Dr. E. P. Singsen, head of the department of poultry science at the University of Connecticut, will talk about controlled feeding of heavy meat-type breeding hens for maximum performance at minimum cost.

Another morning speaker will be Dr. J. E. Oldfield, department of animal husbandry, Oregon State College, who will talk about "A New Look at Swine Feeding."

After lunch at the Monticello Hotel, Dr. Leo S. Jensen and Dr. L. R. Berg, Washington State College, will discuss enzymes for turkeys and chickens.

The remainder of the afternoon program will include nine brief research reports by Washington scientists. Scheduled topics are: New information on light requirements of growing chickens; feeding tests with new antibiotics; factors affecting rate of grain consumption by lactating dairy cows; tranquilizers for beef cattle; pelleted roughages; survey of trace mineral and vitamin A nutrition for beef animals; how nutrition and management affect blood spots in eggs; unidentified growth factor in soybean meal, and protein requirements and unidentified factor supplements for turkey breeders.

Following the research briefs will be a question-answer period. A banquet is scheduled for 6:15 p.m. at the hotel. At 7:30 Dr. Singsen will discuss current research in poultry nutrition and management at the University of Connecticut.

Hotel reservations are to be made directly with the Monticello Hotel.

## State Veterinarian Resigns in Oregon

SALEM, ORE.—Dr. K. J. Peterson, veterinarian, retired recently from the Oregon State Department of Agriculture.

He said he resigned because he could not continue to maintain effective livestock disease and meat inspection programs under the lay administration in the department's division of animal industry.

It has been reported that Oregon veterinarians have made efforts intermittently since 1946 to replace lay administration of the animal division with a professional head.

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## Purina Plans 6 Bulk Stations in Illinois

BLOOMINGTON, ILL.—The Ralston Purina Co.'s Bloomington plant is to become the center of a bulk feed distribution system covering the northern two thirds of Illinois, announcements here recently indicated.

It was reported that six new bulk handling stations are to be built—at DeKalb, Sterling, Kewanee, Monmouth, Beardstown and Oakland. Each station will be of new steel construction, holding 200 tons, with the feed to move in carlots from the Bloomington mill.

Bill Cheek, sales manager, announced the program at a "bulk feed fair" held at the Purina plant, with 20 manufacturers of bulk equipment exhibiting their products for feed dealers who were on hand.

Equipment men outlined their views on the development of bulk handling. One of them, telling of trends in Iowa, estimated that half of the cattle and hogs in Iowa are now fed without any of the feed coming from bags.

## Spencer Kellogg Elects Fred Thomas Director

BUFFALO, N. Y. — Spencer Kellogg & Sons, Inc., Buffalo, announces the election of Fred W. Thomas as a member of its board of directors, effective Oct. 14, 1958. He was elected in September to the newly created position of executive vice president.

Eugene C. Holcombe

## E. C. Holcombe Resigns From Borden Company

NEW YORK — Announcement has been made by Eugene C. Holcombe that he has relinquished his position as director of advertising and sales promotion of the soy and feed supplements division of The Borden Co.

With Borden since 1952, Mr. Holcombe has been in charge of the company's feed supplements advertising and public relations. He supervised the development of a program of feed advertising materials for Borden customers and has also served as a sales and advertising consultant to a number of feed manufacturers.

Starting out as a feed salesman with The Albert Dickinson Co. in Chicago, Mr. Holcombe later became general sales manager for Vitality Mills. He has also held an executive position in the feed department of Kellogg Co., Battle Creek, Mich.

As a speaker on sales management and advertising, Mr. Holcombe has appeared many times before industry and college groups. A collection of his writings has been issued in a book, "Nine Steps to Success." He has held several committee memberships for the AFMA, and is currently a member of its public relations committee. He is also a member of the allied industry committee of PENB.

**13-EGG CARTON—As a part of the egg industry's EGGtober promotion, Miss EGGtober recently presented a 13-egg carton to Ezra Taft Benson, Secretary of Agriculture. The extra egg "symbolizes the extra values eggs hold for America's consumers," it was explained in a report from the Poultry & Egg National Board. Miss EGGtober is otherwise known as Susan Treet from Orange, Conn. When presented the carton, Mr. Benson praised eggs as the "almost perfect food." He said that over 10% of farmers' cash receipts come from the egg industry, and that while the average hen on a commercial poultry farm laid 160 eggs a year 25 years ago, the performance has now been raised to 196 per year. The month-long EGGtober promotion was originated by the agricultural division of Chas. Pfizer & Co., Inc., and co-sponsored by the PENB. The promotion has been scheduled as a continuing, annual event.**

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DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
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# Russian Agriculture Far Behind U.S., Feed Man States

MINNEAPOLIS—L. M. (Red) Henderson, vice president of Doughboy Industries, Inc., New Richmond, Wis., gave 125 members of the Northwest Feed Manufacturers Assn. a graphic view of Russian agriculture this week.

The guest speaker at the Oct. 20 meeting of the group, Mr. Henderson showed more than 150 slides taken during his visit to Europe and Russia as part of the People to People program as approved by the U.S. State Department. He was one of a group of 24 feed industry and farm equipment industry representatives and farmers on the trip.

In Russia, the group visited Leningrad, Minsk, Moscow, Kiev, Kharkov and other smaller cities. (Reports of the tour by other members are in the Oct. 11 and Oct. 18 issues of Feedstuffs.)

While the trip had been planned, Mr. Henderson said, to give the visitors an idea that Russian agriculture was progressing rapidly, there were several indications that the opposite is true.

Showing a picture of a large truck on exhibit in Moscow, he said he had seen only one other. That also was on exhibit. There were several other displays which were obviously models built only for exhibit, he said.

On Russian farms the group saw horse-drawn wagons and agricultural practices which typified the U.S. at the early part of this century, he said.

**Nation of Contrasts**

At one farm the Russians were carefully testing cattle. Questioning brought out the fact that all dairy cows in the country are being tested for production. "They had learned this in a visit to Madison, Wis., similar to the visit we were making," Mr. Henderson said.

But on the same farm, milk cans were standing in the mud, and milk sanitation as practiced in the U.S. was lacking.

"Everywhere you go in Russia there are graphs of agricultural production, and all of them go up, up, up," he said. However, there was little evidence of it on the farms visited, and these were obviously their better farms. The visitors made attempts to go on side trips, but were turned down.

Mr. Henderson indicated that there appeared to be technical knowledge and skill at top levels but that the gulf between this level and the working farmer is wide.

Education for technical skills appears to be very effective, he said. There is a deep interest among the young people to gain the education which will put them in the higher-paid technical group. He showed slides of teen-age Russians studying everywhere in their spare moments.

**Berlin Comparison**

The best comparison between Communism and a free enterprise system, however, can be found in Berlin, he said. He showed one slide of a busy West Berlin intersection with modern cars, buses, well-stocked stores and no signs of the rubble left from World War II but one church which stands as a symbol of the futility of war.

Another slide, taken 500 feet away in East Berlin, shows a street of ruined buildings left from World War II. The street was empty of people, vehicles and stores.

"If there was ever a chance for the Russians to show the world what it could do, it is here in East Berlin," he said. "This is what you see."

**ARIZONA OFFICERS—Reelected to a third term at the annual convention of the Arizona Grain & Seed Assn. held in Phoenix recently were (left to right) Louis A. Melczer, Arizona Flour Mills, Phoenix, president; Glenn E. Quick, Quick Seed & Feed Co., Phoenix, vice president, and Hayden C. Hayden, Hayden Flour Mills, Tempe, secretary-treasurer. All directors were also reelected.**

## ADDED ATTRACTION AT CORNELL CONFERENCE

**BUFFALO—An "added attraction" has been planned for the Cornell Nutrition Conference to be held at the Hotel Statler in Buffalo Nov. 13-14 in cooperation with the American Feed Manufacturers Assn. The addition is a large-scale social hour in the grand ballroom at 6 p.m. Nov. 13 to enable all those in attendance to get together socially under one roof. "Of growing concern to the conference committee has been the tendency of an increasing number to compete with the official program in accomplishing the above-mentioned end," an AFMA bulletin states. "In recent years, hospitality rooms were opened to the delegates by interested groups and this practice is expected to continue. However, these rooms, while contributing measurably to the solution of the social problem, do not solve the over-all problem." The AFMA asks that firms operating hospitality rooms do not operate during the social hour. "This practice should not only be applicable to the Cornell Conference, but to all other nutrition conferences which are staged by public institutions for the primary benefit of the feed industry," the bulletin said.**

## Oilseed Meal Futures Show Mixed Trend

MEMPHIS—Oilseed meal futures were mixed Oct. 22 on the Memphis Board of Trade, compared with the previous week.

Soybean oil meal contracts finished fractionally lower, resulting from slow cash business part of the period, which was not overcome even by the tension on Quemoy. Futures also moved down Oct. 22 as soybean oil gained strength.

Cottonseed oil meal rose during the week, partly because of improved cash demand.

Unrestricted soybean oil meal closed Oct. 22 5¢ to 25¢ ton lower than on Oct. 15, Eastern Trunk Line soybean oil meal 25¢ to 50¢ lower, bulk solvent cottonseed oil meal 50¢ to $1 higher, and sacked old process cottonseed oil meal $1 higher.

Dealings for the period amounted to 13,600 tons of unrestricted soybean oil meal, 700 tons of bulk solvent cottonseed oil meal, and 100 tons of sacked old process cottonseed oil meal.

## California Vote

SACRAMENTO, CAL.—The California Department of Agriculture has announced that the closing date for poultry producers to vote in the Poultry Promotion Council referendum has been extended 16 days. Under the new deadline a ballot must be postmarked not later than midnight, Oct. 31, 1958, to be counted. The referendum has been in progress since Sept. 2, 1958.

## Mill Equipment Firms On West Coast Merge

PORTLAND, ORE.—The management of Larson & Baardson, Inc., Portland and Tacoma, and the J. J. Ross Mill Furnishing Co., Portland, announce the merger of their organizations, effective immediately. In the transaction the physical assets of J. J. Ross have been purchased by Larson & Baardson and will operate under that name.

The merger makes Larson & Baardson the largest firm serving the mill processing field in the states of Oregon and Washington, a company official stated, with complete facilities for the design, installation, sale and manufacture of equipment for the flour, feed, food chemical, wood, grain and seed industries. This includes equipment for custom perforation of screens, roll grinding and corrugating, together with stocks of silk, nylon and wire bolting cloth.

J. J. Ross Mill Furnishing Co. is one of the oldest firms of its type in the Pacific Northwest and is currently celebrating its 50th anniversary. Office and plant facilities are located at 708 N. E. 2nd Ave., Portland.

Larson & Baardson, Inc., was incorporated in 1957 by Forrest D. Larson, Tacoma, Wash., and Andrew B. Baardson, Portland. Both principals are graduate engineers and have experience in sales management and on-the-job engineering. The firm has designed and built hay pelleting plants, bulk storage installations, automatic pushbutton feed mills and has renovated and modernized existing feed mills.

Larson & Baardson is moving its Washington offices to a location midway between Tacoma and Seattle at Federal Way Shopping center.

## Nutrena Mills Reports September Sales High

MINNEAPOLIS — For the fourth successive month Nutrena Mills, Inc., has established a company sales record. The latest mark — an all-time high September — was reported by the Nutrena president, James C. North, as 33% higher than September, 1957.

Mr. North noted that Nutrena—livestock feed subsidiary of Cargill, Inc.—set new records in June and again in July this year for sales volume in any single month, then followed with the best August in company sales history.

## CSC Charges Patent Violations in Lawsuits

NEW YORK — Commercial Solvents Corp. reports that it recently has filed suits in U.S. district courts against two firms charging violation of CSC Patent No. 2,809,892. The patent, CSC officials said, was issued on Oct. 15, 1957, for the manufacture and sale of zinc bacitracin feed supplement.

They said that a suit was filed in U.S. District Court for the Western District of Missouri, Southern Division, against Hoffman-Taff, Inc. Another suit was filed in U.S. District Court for the Western District of North Carolina against Harris-Crane, Inc.

Zinc bacitracin feed supplement is marketed by Commercial Solvents under the trade name Baciferm (registered trademark).

## *Bowman Officials Survive Shipwreck*

CHICAGO—Shipwreck, and a harrowing, narrow escape, were the culmination of a yacht trip for Charles L. Bowman, president of Charles Bowman & Co., New York; Charles G. Marshall, Bowman Feed Products, Inc., Chicago; and Carl Crittendon, vice president of the Chase National Bank, New York.

The three left Cape May Oct. 18, bound for Norfolk, Va., on the ship Romany. Around midnight a sudden and unforecast "nor'easter" struck and at 2:20 a.m. Oct. 19 piled the ship aground on Pig Shoals, off Cobbs Island, Va. There the craft sustained a terrific beating from the 10-ft. waves on the sand shoals, listing frequently to 60 degrees. Much water was shipped, furniture broken and shifted, and all aboard were bruised and shaken.

The Cobbs Island Coast Guard sighted the ship early in the morning, and by noon was able to tow the boat off the shoals and rescue the men. Mr. Marshall remained hospitalized in New York until Oct. 22.

## Chicks Placed in Principal Broiler Areas

(000's omitted)

| Week ending | Maine | Conn. | Penn. | Ind. | Ill. | Mo. | Del. | Md. |
|---|---|---|---|---|---|---|---|---|
| August 16 | 1,180 | 603 | 924 | 880 | 210 | 728 | 1,907 | 1,831 |
| August 23 | 1,124 | 657 | 827 | 851 | 194 | 671 | 1,668 | 1,853 |
| August 30 | 1,071 | 623 | 940 | 886 | 187 | 643 | 1,759 | 1,798 |
| September 6 | 1,022 | 600 | 938 | 870 | 226 | 628 | 1,483 | 1,930 |
| September 13 | 1,070 | 536 | 758 | 864 | 142 | 583 | 1,566 | 1,743 |
| September 20 | 878 | 513 | 692 | 752 | 180 | 552 | 1,371 | 1,714 |
| September 27 | 1,009 | 551 | 680 | 732 | 152 | 495 | 1,450 | 1,789 |
| October 4 | 1,103 | 433 | 767 | 760 | 202 | 567 | 1,601 | 1,674 |
| October 11 | 1,087 | 489 | 584 | 727 | 159 | 570 | 1,576 | 1,690 |
| October 18 | 1,082 | 378 | 633 | 713 | 119 | 495 | 1,445 | 1,643 |

| Week ending | Va. | W. Va. | N.C. | S.C. | Ga. | Fla. | Ala. | Miss. |
|---|---|---|---|---|---|---|---|---|
| August 16 | 1,374 | 649 | 2,493 | 384 | 5,718 | 192 | 2,753 | 1,813 |
| August 23 | 1,301 | 652 | 2,478 | 366 | 5,360 | 200 | 2,571 | 1,695 |
| August 30 | 1,163 | 639 | 2,395 | 361 | 5,093 | 171 | 2,417 | 1,649 |
| September 6 | 1,188 | 537 | 2,337 | 309 | 4,879 | 202 | 2,366 | 1,658 |
| September 13 | 1,138 | 589 | 2,341 | 321 | 4,648 | 215 | 2,391 | 1,553 |
| September 20 | 1,015 | 497 | 2,329 | 292 | 4,573 | 151 | 2,293 | 1,600 |
| September 27 | 1,059 | 423 | 2,245 | 332 | 4,602 | 178 | 2,239 | 1,649 |
| October 4 | 956 | 563 | 2,351 | 313 | 4,927 | 144 | 2,382 | 1,723 |
| October 11 | 1,039 | 478 | 2,398 | 344 | 4,942 | 151 | 2,525 | 1,639 |
| October 18 | 932 | 446 | 2,352 | 362 | 5,002 | 182 | 2,355 | 1,637 |

| Week ending | Ark. | La. | Texas | Wash. | Oregon | Calif. | Total 22 areas 1958 | Total 22 areas 1957 |
|---|---|---|---|---|---|---|---|---|
| August 16 | 2,778 | 392 | 2,196 | 374 | 205 | 978 | 30,541 | 26,625 |
| August 23 | 2,816 | 457 | 1,948 | 359 | 165 | 905 | 29,098 | 25,934 |
| August 30 | 2,587 | 373 | 1,869 | 344 | 125 | 824 | 27,886 | 25,490 |
| September 6 | 2,381 | 395 | 1,898 | 359 | 168 | 878 | 27,210 | 25,228 |
| September 13 | 2,283 | 400 | 1,740 | 342 | 176 | 916 | 26,335 | 25,028 |
| September 20 | 2,165 | 355 | 1,618 | 249 | 193 | 821 | 24,803 | 24,298 |
| September 27 | 2,242 | 309 | 1,469 | 287 | 175 | 829 | 24,896 | 24,134 |
| October 4 | 2,405 | 371 | 2,023 | 247 | 123 | 871 | 26,506 | 24,675 |
| October 11 | 2,416 | 404 | 2,165 | 272 | 149 | 770 | 26,574 | 24,237 |
| October 18 | 2,374 | 423 | 2,126 | 219 | 141 | 761 | 25,820 | 23,930 |

# "Quaker's know-how in bulk feeds and concentrates is helping dealers make bigger profits in the changing feed picture,"

says **J. C. HUCKABEE,** *Feed Sales Manager of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*

*J. C. HUCKABEE joined The Quaker Oats Company in his native Texas and in 6 years was promoted to Feed Manager of the Division. "Huck's" remarkable sales ability and leadership advanced him rapidly to his present position as Manager of Quaker's entire Feed Sales.*

"As I see today's feed picture, it presents to feed dealers a fork in the road. Which route will you take?

"At this critical time, I am glad to report to you on what The Quaker Oats Company is doing to help Ful-O-Pep Dealers take the road that leads to new profit opportunities.

"Our company has carefully read the signs at the fork in the road. One sign pointing to bigger profits is BULK FEED. Quaker's leadership in bulk feeds is preparing Ful-O-Pep Dealers to attract the new kind of business developing in our changing farm economy. Quaker recognizes such facts as these:

"*Fewer feeders* mean small-order and bag business goes down. There was a 26% decline in the number of farms from 1920 to 1954. The number of feeders is estimated to be almost 30% smaller in 1965 compared with today.

"*Larger feeders* are developing due to the decline in numbers combined with increased demand for livestock products by our rapidly growing population.

"*Today's more specialized feeders* are cost-conscious feeders. And their business is going to the dealers who have the bulk feeds for more profitable feeding.

"I assure you that Ful-O-Pep Dealers are taking advantage of Quaker's know-how in bulk feeds. Already several of our plants are shipping half their feed in bulk. And the use of bulk feeds is increasing in all areas.

"Another sign pointing to the profit route is CONCENTRATES. And here, too, Ful-O-Pep Dealers are profiting from Quaker research and know-how.

"In today's battle against rising costs, feeders have to get more meat, more milk, more eggs from grain. To meet this challenge, Quaker has developed high-quality concentrates and hundreds of proven mixing formulas that are setting amazing new feed conversion records in practical on-the-farm feeding tests.

"Big feeders who need the lower-cost feeding provided by bulk feeds and concentrates are being drawn to Ful-O-Pep Dealers.

"The feed dealer who wants to move ahead with the times can find the aggressive leadership he needs in The Quaker Oats Company."

J. C. Huckabee

**FUL-O-PEP FEEDS**

*made by The Quaker Oats Company*

We urge Feed Dealers to visit our modern Feed Mills located at: Cedar Rapids, Ia. Memphis, Tenn. • St. Joseph, Mo. • Sherman, Tex. • Shiremanstown, Pa. • Lawrenceburg, Ind. • Chattanooga, Tenn. • Tampa, Fla. • Asheville, N. C. • Jasper, Ala. • Los Angeles, Calif.

**CONTROL OFFICIALS—Past and new officers of the Association of American Feed Control Officials are shown in these photos taken at the association's recent convention in Washington. In the first picture, L. E. Bopst (right), College Park, Md., is being presented with a plaque upon his retirement from the office of secretary of the AAFCO. Making the presentation is W. C. Geagley, Lansing, Mich., who was president of the association in 1933. Mr. Bopst served as secretary for 31 years. In the second picture are officers of the association for the coming year. Left to right are Bruce Poundstone, Lexington, Ky., the new secretary; M. H. Snyder, Charlotte, W.Va., vice president; L. A. Koehler, Bismarck, N.D., president, and R. T. Wetherbee, Burlington, Vt., reelected treasurer. In the third picture is the retiring president, R. F. Kneeland, Jr., Food and Drug Administration, Washington. He is shown holding a plaque which was presented to him for his service as president during the past year.**

# Report of Executive Committee of the Association of Feed Control Officials

*EDITOR'S NOTE: The annual report of the Executive Committee of the Association of American Feed Control Officials is of major interest and importance to the feed industry in the U.S. It is the source of actual and potential changes in official definitions and regulations concerning feedstuffs. Printed here is the official text of the 1958 report, as presented and adopted at the annual meeting of the AAFCO Oct. 15-16 in Washington. This report should be read in connection with the Official Publication of the association, in order to understand the changes and other references.*

The Executive Committee of the Association met at 4:10 p.m., Wednesday, Oct. 15, 1958, with Chairman M. H. Snyder presiding. All members of the committee were present.

### STATES RELATIONS COMMITTEE

The Executive Committee moves that the recommendations of the States Relations Committee with respect to the Uniform Bill be referred to the Uniform Feed Bill and Regulations Committee for study.

### COLLABORATIVE CHECK SAMPLE COMMITTEE

The Executive Committee thanks the Collaborative Check Sample Committee for its work and comprehensive report. In view of the recommendation of the chairman, the Executive Committee recognizes the value of a Collaborative Check Sample Program extending over a number of years.

### CONSTITUTION AND BY-LAWS COMMITTEE

Since the Chairman reported no requests for modification or additions, the Executive Committee took no action.

### FEED ADDITIVES COMMITTEE

No report.

### LIVESTOCK REMEDY COMMITTEE

Since the Chairman reported no requests for modifications or additions, the Executive Committee took no action.

### MEDICATED FEED LABELING COMMITTEE

The Executive Committee moves that the report of the Medicated Feed Labeling Committee be included in the 1959 publication and that the information relative to drugs in feeds now appearing in the 1958 publication be retained.

### UNIFORM FEED BILL AND REGULATIONS COMMITTEE

The Executive Committee deferred action on the report of the Uniform Feed Bill and Regulations Committee until the closed session of Thursday afternoon.

### UNIFORM REGISTRATION AND TONNAGE REPORT

The Executive Committee recommends that the report of the Uniform Registration and Tonnage Committee be circulated to the Association membership for comment.

No action on the report was taken at this time.

### ANALYTICAL METHODS FOR NEW MEDICATED PRODUCTS

The Executive Committee moves the adoption of the report of the Committee on Analytical Methods for New Medicated Products, with special emphasis placed upon item No. 10, which reads as follows:

"The Association of American Feed Control Officials will accept the proposition that feeds containing a new drug for which a method has been proved satisfactory by the A.O.A.C. collaborative procedure would not be denied distribution on account of methodology."

### PET FOOD

The Executive Committee commends the Pet Food Committee for interest taken in the activity of this industry, especially as it applies to the area of developing satisfactory labels, and moves that this committee be continued.

### GRAIN STANDARDS

No report.

### ALFALFA PRODUCTS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### AMINO ACIDS

The Executive Committee moves that in accord with the recommendations of the investigator the following definition be adopted as tentative:

"Methionine Hydroxy Analogue Calcium is a product which contains a minimum of 90% dl-2-hydroxy-4-methylthiobutyric acid calcium salt."

Since it is the customary policy of the Association to retain the official definition until the tentative one is moved to official status, deletion of the official definition is not suggested at this time.

### ANIMAL PRODUCTS

The Executive Committee moves that in accord with the recommendations of the investigator:

(1) Tentative definition T-2, Hydrolyzed Poultry Feathers, be adopted as official.

(2) Tentative definition T-1, Digester Tankage, remain in the tentative status.

(3) Definition 19, Animal Fat, be deleted and included under Fat Products.

(4) The following definition be adopted as tentative:

"Poultry By-Product Meal consists of the ground, dry-rendered clean parts of the carcass of slaughtered poultry, such as heads, feet, undeveloped eggs and intestines, exclusive of feathers, except in such trace amounts as might occur unavoidably in good factory practice. It shall contain not more than 14% ash and not more than 4% acid-insoluble ash."

### BARLEY PRODUCTS

No report.

### CHEMICAL PRESERVATIVES

The Executive Committee moves that, in accord with the request of the investigator, the list of chemical preservatives and note (page 27) remain in their present status for another year.

### CITRUS PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator:

(1) Official definitions 33 and 34, Dried Citrus Pulp, Citrus Meal and Citrus Seed Meal be deleted.

(2) Tentative definitions T-4, Dried Citrus Pulp; T-5, Dried Citrus Meal-Citrus Fines-Citrus Screenings; T-6, Dried Citrus Pellets; and T-7, Citrus Seed Meal be adopted as official.

### CORN PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator:

(1) Tentative definition T-10, Corn Cob Ring Cellulose, be continued in the tentative status.

(2) Tentative definitions T-8, Kibbled Corn; T-9, Dehydrated Corn Plant; and T-11, Ground Corn Cob, be adopted as official.

(3) The following definition be adopted as in future-discussion status:

"Corn Cob Fractions is the product obtained by the mechanical separation of one or more fractions of corn cobs. For identification purposes the name of the fraction or fractions shall be included parenthetically following the name of the product, e.g., Corn Cob Fractions (Hard seedy ring and beeswings)."

### COTTONSEED PRODUCTS

Since the investigator reported no requests for modification or addition, the Executive Committee took no action.

### CUSTOM MIXING OF DRUGS IN FEEDS

In accord with the request of the investigator, the Executive Committee recommends that a committee be appointed to study the problem of custom mixing of drugs in feeds.

### DISTILLERS PRODUCTS

Since the investigator reported no re-


**CRITICally speaking**

"You can be a Happy feed dealer, too!" says

**DON HARDEN**

**GALESBURG, ILL., Feedman**

"If you take your place in the line-up of Critic dealers."

**WHY ARE THEY HAPPY?**

Because their business is growing with The Critic system of Bulk Service

**WHY IS THE CRITIC BULK SYSTEM BETTER?**

- ★ Critic pioneered bulk handling in the Midwest so has more experience than any other feed firm . . . 12 years.
- ★ Less "fines" because of an exclusive hard pellet and better handling technique
- ★ Mill to the farm delivery service
- ★ Actual laboratory controlled quality
- ★ The largest bulk discount in the industry
- ★ Proven bulk equipment financing plan

Take Your Place in the Line-up of Happy Critic Dealers

There May Be a Franchise Available in Your Area

Call The Beardstown Mills Co., Beardstown, Ill. Phone 130 . . . ask for Bob Fischer

for the Greatest Grow on earth

CRITIC QUALITY FEEDS

ALL CRITIC FEEDS ARE QUALITY CONTROLLED



SW

FOR THE BEST IN GRADERS

SPROUT-WALDRON

MUNCY, PENNA.

quests for modifications or additions, the Executive Committee took no action.

### DRUGS

In accord with the request of the investigator, the Executive Committee recommends that his report be included in the Official Publication in conjunction with the report of the Medicated Feed Labeling Committee.

### FATS AND OILS

The Executive Committee moves that, in accord with the request of the investigator, the following definitions be adopted as tentative:

**"Animal Fat** is the product obtained from the tissues of mammals and/or poultry in the commercial processes of rendering or extracting. It consists predominantly of glyceride esters of fatty acids and contains no additions of free fatty acids or other materials obtained from fats. It shall contain not less than 90% total fatty acids, not more than 2.5% unsaponifiable matter and not more than 1% insoluble matter. If the product bears a name descriptive of its kind or origin, for example, 'tallow,' 'lard,' 'grease,' it must correspond thereto. If an antioxidant (or antioxidants) is used, the common name or names shall be indicated, followed by the word 'preservative' or 'preservatives.'

**"Vegetable Fat (or oil)** is the product of vegetable origin obtained by extracting the oil from seeds or fruits which are commonly processed for edible purposes. It consists predominantly of glyceride esters or fatty acid and contains no additions of free fatty acids or other materials obtained from fats. It shall contain not less than 90% total fatty acids, not more than 2% unsaponifiable matter and not more than 1% insoluble matter. If the product bears a name descriptive of its kind or origin, for example, 'soybean oil,' 'cottonseed oil,' it must correspond thereto. If an antioxidant (or antioxidants) is used, the common name or names shall be indicated, followed by the word 'preservative' or 'preservatives.'

**"Hydrolyzed Fat or Oil** (feed grade) is a product obtained in the fat processing procedures commonly used in edible fat processing or soap making. It consists predominantly of fatty acids and shall contain not less than 85% total fatty acids, not more than 6% unsaponifiable matter and not more than 1% insoluble matter. Its source shall be stated in the product name, for example, 'hydrolyzed animal fat,' 'hydrolyzed vegetable oil,' 'hydrolyzed animal and vegetable fat.' If an antioxidant (or antioxidants) is used, the common name or names shall be indicated, followed by the word 'preservative' or 'preservatives.'

**"———— Ester ———— (feed grade)** is the product consisting of methyl, ethyl or other non-glyceride ester of fatty acids derived from animal and/or vegetable fats. It consists predominantly of the ester and shall contain not less than 85% total fatty acids, not more than 10% free fatty acids, not more than 6% unsaponifiable matter and not more than 1% insoluble matter. Its source shall be stated in the product name, for example, 'methyl ester of animal fatty acids,' 'ethyl ester of vegetable oil fatty acids.' If an antioxidant (or antioxidants) is used the common name or names shall be indicated, followed by the word 'preservative' or 'preservatives.'

**"Fat Product (feed grade)** is any fat product which does not meet the definitions for animal fat, vegetable fat or oil, hydrolyzed fat or fat ester. It shall be sold on its individual specifications. If an antioxidant (or antioxidants) is used, the common name or names shall be indicated, followed by the word 'preservative' or 'preservatives.'

**"Note**—The use of the term 'feed grade' requires that the specific type of product will have been adequately tested to prove its safety for feeding purposes.

**"Note**—Any mixture of two or more fats or fat derivatives defined above is to be identified by listing each component, for example, 'animal fat and hydrolyzed vegetable oil'."

### GRAIN SORGHUMS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### LINSEED AND FLAX PRODUCTS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### MARINE PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator, all definitions for marine products remain in their present status for another year.

### MILK PRODUCTS

No report.

### MINERAL FEEDS

The Executive Committee moves that, in accord with the request of the investigator, the following be added to definition 152, Additional Officially Recognized Mineral Ingredients:

Ethylene Diamine Dihydriodide.
Magnesium Carbonate.
Magnesium Oxide.
Manganese Chloride.

### MISCELLANEOUS PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator, the following definitions be adopted as tentative:

1. "Dried Spiced Tomato Pomace is a dried mixture of tomato skins, pulp and crushed seeds, resulting from the production of tomato products wherein spices used in the tomato product remain in the pomace."

2. Calcium cyclamate and sodium cyclamate be included in the list of officially recognized feed ingredients and that the parenthetical statement "non-nutritive sweetener" be included therewith for labeling purposes.

### MOLASSES

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### NON-PROTEIN NITROGEN

The Executive Committee moves that, in accord with the request of the investigator, the following definition be adopted as tentative:

"Feeding Urea is predominantly urea, but may contain other non-toxic nitrogen compounds which are present as by-products from the commercial synthesis and processing of urea. It shall contain not less than 41.9% nitrogen (equivalent to 262% protein). If a conditioner(s) is used, the name of the conditioner(s) shall be stated."

### OAT PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator:

(1) Definition 159, Oat Chop, Ground Oats, Pulverized Oats, Crushed Oats, or Crimped Oats, be deleted.

(2) That tentative definition T-19, Oat Chop, Ground Oats or Pulverized Oats be amended by addition of the sentence: "It shall contain not more than 15% crude fiber," and be adopted as official.

(3) That tentative definition T-20, Mixed

(Turn to page 14)


## SUPERIOR MANGANESE ADDITIVE

*Manganese Carbonate*

(Chemically Precipitated)

Manganese carbonate has proved a superior additive for feedstuffs. Stable—non-hygroscopic—completely available to the animal. Free-flowing for easy blending. High purity—low cost. Available for immediate shipment.

**MANGANESE CHEMICALS CORPORATION**

RAND TOWER *Call FEderal 2-8371* MINNEAPOLIS 2, MINNESOTA

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P.T.* Personal Touch service by *Amburgo*

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**BACIFERM**

and other leading feed additives, minerals and antibiotics.

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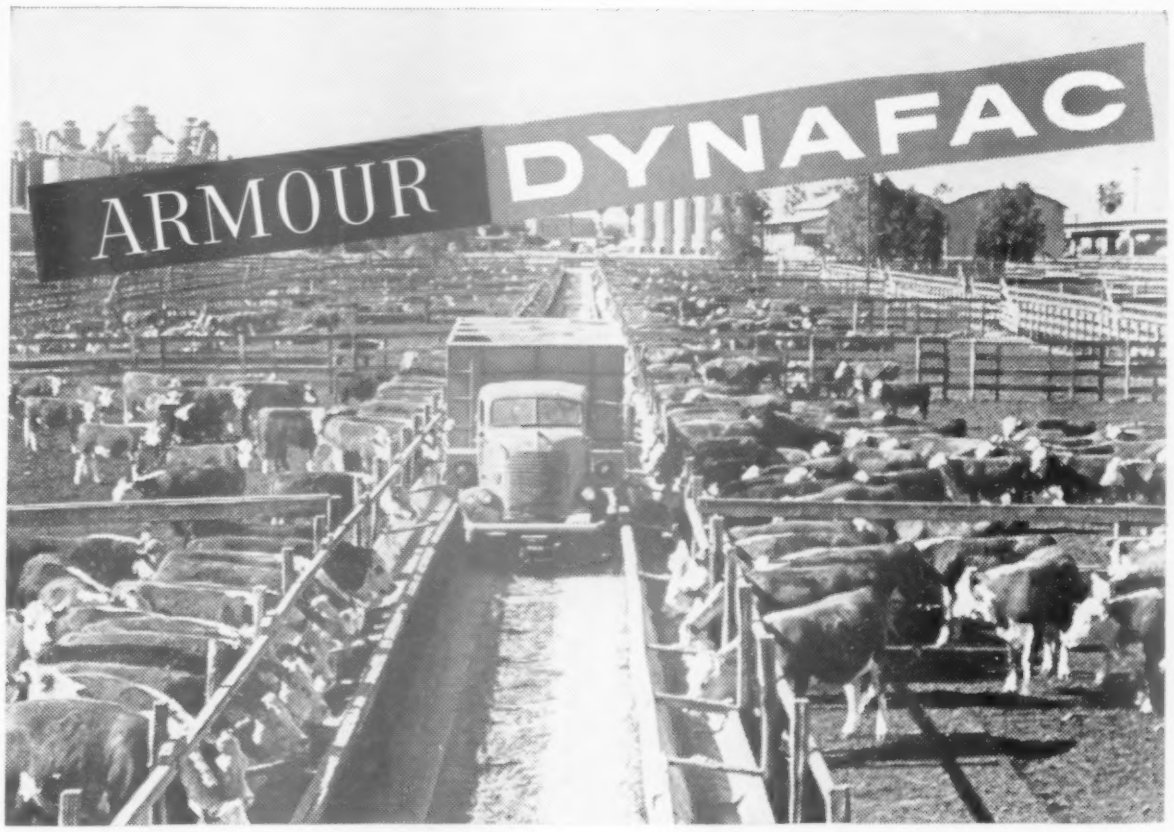



THE WESTERN FEEDLOTS REPORT . . .

"FROM A FASTER START TO A FINER FINISH,

FEED 'EM DYNAFAC!"

"You can almost see them growing . . . those slick hair coats and big briskets are what I like . . . no scours at all since we started feeding Dynafac . . . man, what a difference in feed costs!"

These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

Operators report good results using both Dynafac and hormones, either oral or implant. Each additive works in its own way to give you improved efficiency. Not a hormone, Dynafac remains in the intestinal tract to do its job—controls harmful bacteria and fungi without disturbing beneficial organisms in the paunch.

Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

You, too, can make bigger profits by feeding Dynafac. Why not get it into your feed now?

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.

# *If the antibiotic you're now*

*using is asleep on the job...*

# GET YOUR FEED BACK IN ACTION WITH BACIFERM®!

***THOSE OLDER BACTERIOSTATIC (BACTERIA-SLOWING) "BROAD-SPECTRUM" ANTIBIOTICS SEEM TIRED OUT.*** There is increasing evidence that the response of poultry and swine to them is diminishing.[1,2] Why? Experts suggest these antibiotics have built up resistant strains of bacteria.[3] In other words, these older tetracycline type antibiotics are asleep in the feed. For many nutritionists, the solution to this problem is to *change the antibiotic.* Change to bactericidal (bacteria-killing) Baciferm. Manufacturers who have already switched to Baciferm have found . . .

***BACIFERM SNAPS FEEDS BACK TO FULL EFFICIENCY FAST!*** Pigs pile on weight fast. Egg production improves. Broilers finish off faster. Mortality falls off. Baciferm contains the exclusive* antibiotic zinc bacitracin. Baciferm's *selective* action gets right to work killing dangerous bacteria but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. With Baciferm there is no upset of normal bacterial balance. In stress periods, Baciferm controls deadly secondary invaders. Baciferm never dozes on the job.

***BACIFERM! TWO-WAY INSURANCE FOR GOOD BUSINESS!*** Baciferm, at high levels or low levels, is sure, two-way insurance . . . for feed users *and* for feed manufacturers. Baciferm packs into feeds plenty of extra B-vitamins, high protein, vitamin K and unidentified growth factors. Zinc bacitracin has the antibiotic stability manufacturers require.

And – Baciferm can be added to each ton of your feed at $2 to $4 less than the tetracyclines.

1. Bird, H. R.: Coming Events in Poultry Nutrition. Hatchery & Feed, July, 1958.
2. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, in press.
3. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.

*Made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957.

# the buy is BACIFERM®!

*(ZINC BACITRACIN ANTIBIOTIC SUPPLEMENTS)*

ANIMAL NUTRITION DEPARTMENT • **COMMERCIAL SOLVENTS CORPORATION,** 260 MADISON AVE., NEW YORK 16
IN MEXICO: COMSOLMEX, S.A., MEXICO 7, D.F. • CANADIAN SALES REPRESENTATIVE: NORMAN STARK

CSC

Feed Oat Chop, Ground Mixed Feed Oats, or Pulverized Mixed Feed Oats be adopted as official.

### PEANUT PRODUCTS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### RICE PRODUCTS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### SCREENINGS

Since the investigator reported no requests for modifications or additions, the Executive Committee took no action.

### SOYBEAN PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator:

(1) The "Note" preceding the definitions be deleted.

(2) Definition No. 191, Soybean Mill Feed, be retained, and the following definition be placed in the tentative status:

"Soybean Mill Product is the material resulting from the manufacture of soybean flour, soybean grits, or dehulled solvent extracted soybean oil meal, and is composed of soybean hulls and the offal from the tail of the mill. It shall contain a minimum of 11% crude protein and a maximum of 35% crude fiber."

(3) Editorial change to make definition No. 193, Soybean Hulls, read:

"Soybean Hulls is the product consisting primarily of the outer covering of the soybean."

(4) Editorial change to make definition No. 194, Solvent Extracted Soybean Feed, read:

"Solvent Extracted Soybean Feed is the material resulting from the partial removal of protein and nitrogen-free extract from dehulled solvent extracted soybean oil flakes. It shall be designated and sold according to its protein content."

(5) Definition No. 195, Expeller Soybean Oil Chips, and No. 197, Hydraulic Soybean Oil Cake, be combined to read:

"Soybean Oil Cake and Soybean Oil Chips are the products obtained after removal of part of the oil from soybeans or dehulled soybeans by crushing, cooking, and mechanical processes. For each product the designating name shall include a term 'hydraulic,' or 'expeller,' descriptive of the process of manufacture, and the product must correspond thereto. It shall be so designated and sold according to its protein content."

(6) Editorial change to make definition No. 199, Solvent Extracted Soybean Oil Flakes, read:

"Solvent Extracted Soybean Oil Flakes is the product obtained after extracting most of the oil from soybeans or dehulled soybeans by cracking, heating, flaking, and the use of solvents. After extraction of the oil the product is cooked. It shall be designated and sold according to its protein content."

(7) Definitions No. 196, Expeller Soybean Oil Meal; No. 198, Hydraulic Soybean Oil Meal, and No. 200, Solvent Extracted Soybean Oil Meal, be combined to read:

"Soybean Oil Meal is the product obtained by grinding the cake, chips, or flakes obtained according to the process employed. Its name shall include one of the terms 'hydraulic,' 'expeller,' or 'solvent extracted' to specify the method of manufacture of the source material. It shall be designated and sold according to its protein content."

(8) Definition No. 203, Soybean Cubes or Soybean Pellets, be changed to include "Pea Size." It will then read:

"Soybean Cubes, Soybean Pellets, or Soybean Pea Size consisting of Soybean Oil Meal, Soybean Oil Cake, or Soybean Chips which have either been graded for size or passed through a cubing or pelleting machine. The product shall be firm but not flinty, of sweet odor, and free from mold. Its name shall include one of the terms 'expeller,' 'solvent extracted,' or 'hydraulic' to specify the manufacture of the source material. It shall be designated and sold according to its protein content."

(9) Definition T-21, Soya Grits or Soya Bean Grits, be editorially changed and made official to read as follows:

"Soy Grits or Soy Flour is the screened, graded product obtained after expelling or extracting most of the oil from selected, sound, clean, dehulled soybeans. It shall not contain more than 2% crude fiber. Its name shall include one of the terms 'expeller,' or 'solvent extracted' to specify the manufacture of the source material. It shall be so designated and sold according to its protein content."

(10) The following definition be placed in the future-discussion status:

"Soy Phosphatide or Soy Lecithin is the mixed phosphate product obtained from soybean oil by a degumming process. It contains lecithin, cephalin, and inositol phosphatides, together with glycerides of soybean oil and traces of tocopherols, glucosides, and pigments. It shall be designated and sold according to conventional descriptive grades with respect to consistency and bleaching."

(11) Definitions No. 190, Ground Soybeans; No. 201, Dehulled Solvent Extracted Soybean Flakes; and No. 202, Dehulled Solvent Extracted Soybean Oil Meal, no change.

### VITAMINS

The Executive Committee moves that, in accord with the request of the investigator, the period at the end of Resolution A (b) be replaced with a semicolon, and the following be added:

"and providing that the term 'd-pantothenic acid' be used in stating the pantothenic acid guarantee."

### WHEAT PRODUCTS

The Executive Committee moves that, in accord with the request of the investigator, the following resolution be placed at the end of the definitions for wheat products:

Resolved that when "Ground Wheat Screenings not exceeding Mill Run" have been added to Wheat Bran, Wheat Gray Shorts, or any other wheat product, a declaration to that effect must be made in the name and in type of the same size. For example:

(a) Wheat Bran with Ground Wheat Screenings not exceeding Mill Run, or ...%.

(b) Wheat Gray Shorts with Ground Wheat Screenings not exceeding Mill run, or ....%.

### YEAST

The Executive Committee moves that, in accord with the request of the investigator, the following definition be adopted as tentative:

"Irradiated Dried Yeast, Irradiated ..... Dried Yeast is the dried non-fermentative yeast which has been subjected to ultraviolet rays in order to produce antirachitic potency."

The Executive Committee expresses its appreciation to the committee and investigators for the work performed during the year.

## A. E. Staley Sponsors Feeds Jingle Contest

DECATUR, ILL.—The A. E. Staley Manufacturing Co., Decatur, is offering over $5,000 in prizes in a jingle contest during its "fall feed fair" for Staley's feeds.

A total of 509 prizes will go to U.S. poultry raisers sending in the best two-line jingle, starting with the words "Staley's egg feed" and rhyming the last word of the two lines.

First prize is $500 worth of any Staley's feeds, or double that amount if the winner has filed a 60-day production record with his Staley's dealer before Jan. 15, 1959.

Entries must be postmarked by midnight, Nov. 15, and received by Nov. 20, 1958. Contestants may submit as many entries as they like, using official entry blanks, each accompanied by an analysis tag from one of eight varieties of Staley's egg feeds.

### STORAGE ADDITION

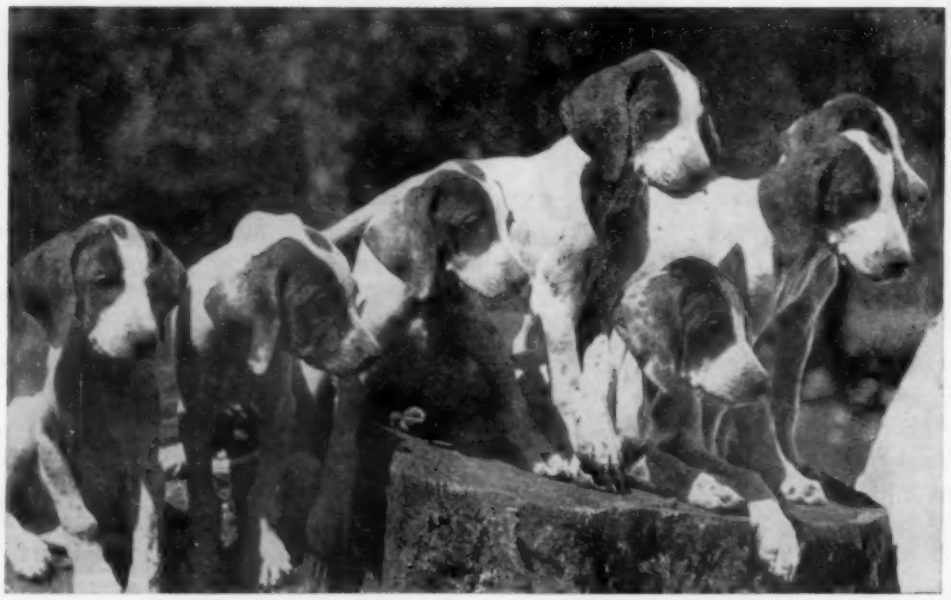
FARGO, N.D.—An addition to the Goldberg Feed & Grain Co. elevator at the Stockyards Corner, southwest Fargo, is being erected to provide an additional 240,000 bu. capacity. The 60 by 240-ft. structure will bring total capacity to more than a million bushels.


Make it Your Policy to obtain

NUTRITION INSURANCE

50 YEARS OF afma SERVICE
AMERICAN FEED MFRS. ASSN.

with BREWER'S DRIED YEAST



High Quality Protein
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Today, owners of dogs look to modern manufactured foods for complete, scientific nutrition for their pets. Research on the dietary requirements of dogs combined with quality ingredients assure them of a variety of complete and balanced rations, adequate to maintain them healthy, alert and productive. Brewer's Dried Yeast in the formula offers nutrition insurance, particularly in the area of those unidentified factors known to be important. Brewer's Dried Yeast helps to avoid the risk of nutritional deficiencies by providing a multitude of essential nutrients in a single, highly digestible ingredient. By increasing appetite appeal, promoting correct metabolism and providing protection against certain types of infection, it imparts qualities which insure a longer, more active life. The natural anti-oxidant properties of Brewer's Dried Yeast guard flavor and palatability and preserve freshness by preventing the development of rancidity. Brewer's Dried Yeast is available in several granulations. Free-flowing, it is easy to mix and economical. Available in ample supplies.

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# AJACS-O-MATIC

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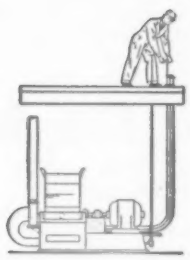
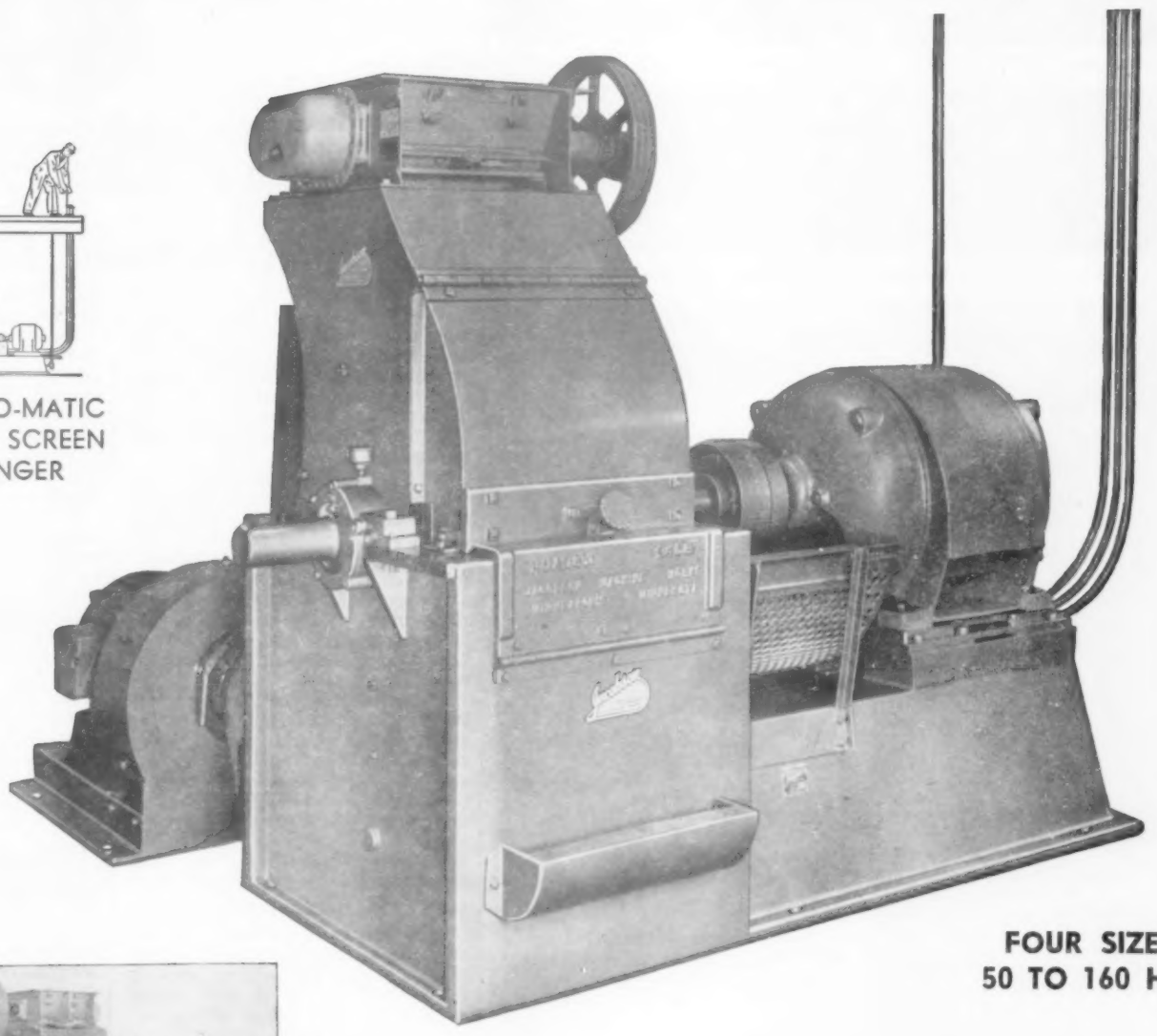


AJACS-O-MATIC
REMOTE SCREEN
CHANGER



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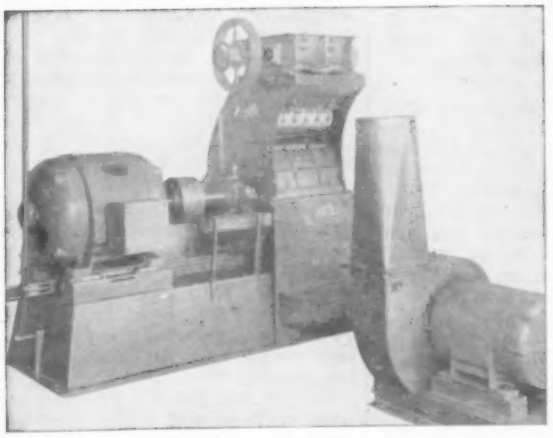

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**ANIMAL ILLUSTRATION—This is the type of agricultural art produced by John Adnrews, now on the art staff at Creighton University, Omaha. Mr. Andrews has for a number of years studied illustrating poultry and livestock to achieve authenticity in his farm animal drawings.**

# Artist Draws "Authentic" Farm Animals

OMAHA, NEB.—"As grotesque as a three-legged rooster prancing down Main St. at high noon," is the way John Andrews described many of the drawings of farm animals that appear in farm and local publications. He therefore has made an extensive effort to inject authenticity into agricultural art.

"It was 18 years ago while I was art director for Hoards Dairyman magazine that I realized something should be done about advertising and editorial art in farm papers," he recalls. The artist, now on the art staff at Creighton University, Omaha, has spent much of his time since then studying poultry and livestock on farms, and perfecting his drawing technique.

In an article that appeared in Poultry Supply Dealer, Mr. Andrews asked, "Why should glaring errors crop up again and again in hatchery and equipment advertising illustrations? Why shouldn't the picture of a chick in a hatchery or equipment ad be as perfectly executed and as authentic as the 'slick chick' used to advertise hosiery?

**Big Selling Factors**

"The answer, I am afraid, is that advertisers and advertising sources fail to realize that authenticity, in the specialized field of farm animal illustration, is a bigger selling factor than sparkle and glamor."

He pointed out in the article that poultry raisers are quick to observe lack of quality in chicks, so illustrations of birds should be kept looking slick, erect and well-groomed. "Folder or mat services that do not definitely picture the poultry you sell should be avoided. A droopy look or a poorly drawn bird can discourage a sale immediately," he said.

The artist points out that when the average city artist works up an illustration using a beautiful model, there is a great amount of time spent in preparing the model, photographing and finishing the drawing. "But when this same artist works on an advertisement for a farm paper, he probably works from a fuzzy photograph the client sent in, spending many hours retouching to bring out the lost detail. He strips this into the ad and sends it to the paper. No thought, no posing, no beautiful illustration—just a fuzzy, retouched photo," he emphasizes.

He points out that the farmer these days is generally college trained, reads Life magazine, sees television and is a scientist-business man. "He frowns on 'hick type' art; he shakes his head when he sees a bloat type steer with pretty eyes," Mr. Andrews says.

**Monthly Service**

Mr. Andrews' interest in illustrating farm animals, and his conviction that small businesses on limited advertising budgets can benefit by using "true type" farm animal drawings, has prompted him to start a service of furnishing his drawings as ready-to-use art for advertising and editorial purposes.

The drawings are sent out each month in packets of five 8½x11 sheets containing the scratchboard drawings of farm animals. In season, illustrations for hybrid seed corn, pets, fur animals, grain sorghum and farm equipment are included. Also, each packet contains one drawing designed for two color reproduction.

Mr. Andrews uses the scratchboard technique because this technique reproduces best on a wide variety of paper stock—"from the coarsest newsprint to the glossiest enamel."

He mentioned that when he visits farms to do his illustrating, he gets top-notch cooperation from the farmers. "They tell me all their feeding problems, invite me in for dinner and help get animals into position for the best angles. They have never had an artist out drawing farm animals, and they get excited waiting for the animals to appear in farm papers."

## Cobb Adds Hatchery, Breeding Farm in South

CONCORD, MASS. — A hatchery and a 200-acre breeding farm have been opened in Gainesville, Ga., by Cobb's Pedigreed Chicks, Inc.

The Concord, Mass., firm has established the Gainesville operation as its headquarters for the production and dissemination of White Rock breeding stock throughout the Southeast, announced H. Ted Raymond, Jr., sales manager.

"The demand for Cobb White Rocks in the South has made it imperative for us to establish a centrally-located headquarters in the area," Mr. Raymond said. "Although we have expanded our facilities at Jasper, Ala., we have not been able to keep pace with the needs of the southern poultry industry."

He said that the new hatchery and breeding farm will devote itself exclusively to the production and sale of Cobb White Rock Breeding Stock. Commercial broiler chicks will not be produced or sold.

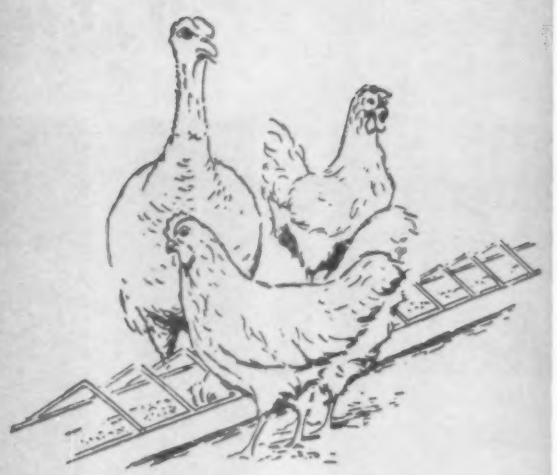
Gerald Showalter, formerly associated with the Cobb plant at Goshen, Ind., will head the hatchery.

The hatchery is air-conditioned throughout, with special humidity controls for maximum results. Floors are covered with tile, with acoustic tile on many of the ceilings.

The Cobb breeding farm is located about five miles outside Gainesville and has a capacity of some 15,000 breeders with grass range for the rearing of young stock. Heading up operations there is Robert Jewett.

**NAMES NEW DEALER**

CALLAWAY, MINN.—Audubon Cooperative Elevator here has been named authorized dealer for Land O'Lakes feeds, seeds and fertilizers. The Audubon firm recently purchased the elevator from Bill Underberg.



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### *PERFORMING COMMERCIALLY*

**DaweNzyme** is long out of the laboratory stage and into commercial usage. Hundreds of carloads of top-performing feeds are being fortified with DaweNzyme, the starch-splitting enzyme system which makes barley the approximate of corn in growth, feed efficiency and palatability.

**DaweNzyme** extensively tested by state experiment stations and proved commercially, is an economic boon to those where barley is available for less than corn. With DaweNzyme, barley can be the principal grain without the former penalties of lowered growth and feed efficiency, compared to corn.

**DaweNzyme** is easily incorporated in the feed formula. It is a dry, free-flowing, stable material. No special handling is involved and ordinary mixing procedures are followed.

*While attention has been focused on barley, tests show small, but consistent, improvements in the utilization of corn itself, when supplemented with DaweNzyme.*

Dawe's

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## makes barley better for birds at lower cost than corn diet.

**1956** . . . Dawe's began research and development on the application of enzymes to nutrition.

**1957** . . . April . . . Washington State College reported starch-digesting enzymes improved nutritional value of barley in poultry feeds.

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Investigate the economic advantages of fortifying your feeds with DaweNzyme today. It is available immediately in any quantity.

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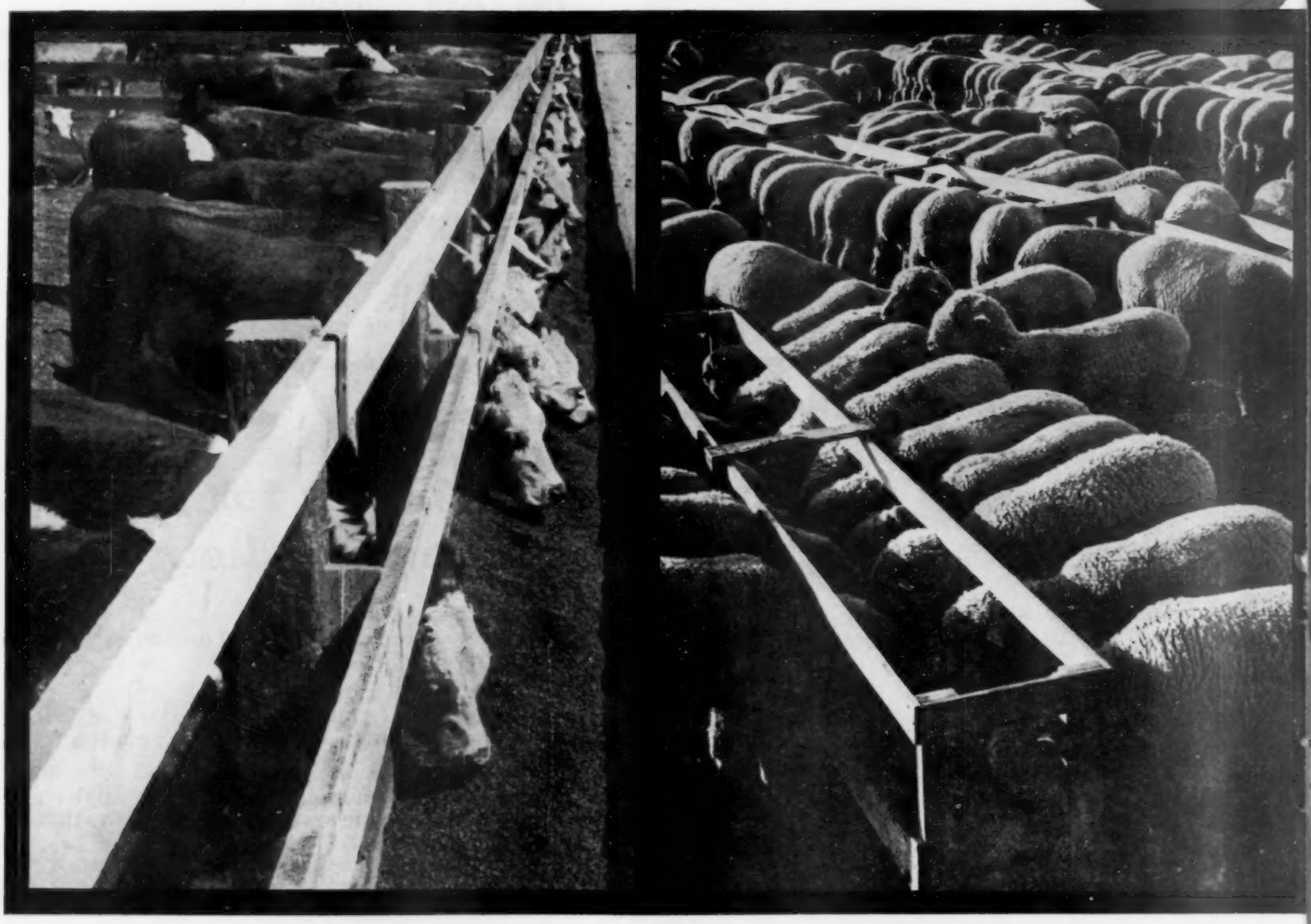
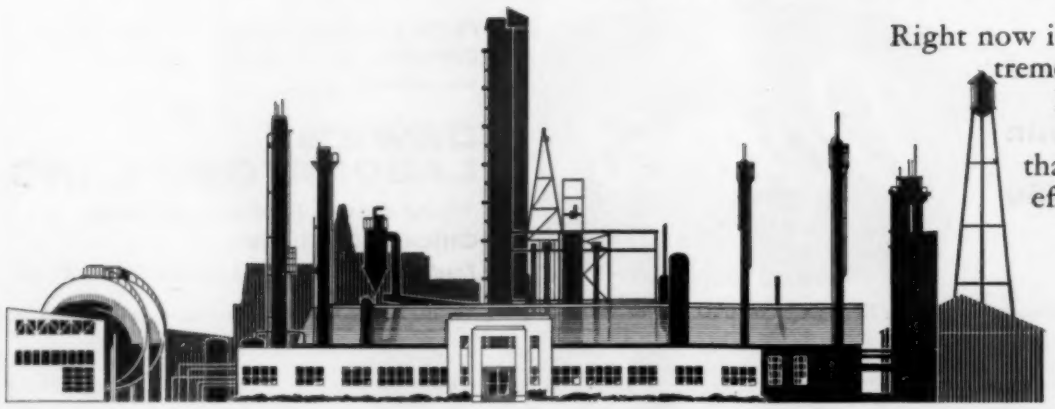


**How John Deere UREA helps you cut costs**



Right now is the time to take advantage of the tremendous profit JOHN DEERE UREA FEED COMPOUND can give you. It's the low cost source of protein that actually improves the quality and efficiency of your dairy, beef and sheep feeds.

Because JOHN DEERE UREA FEED COMPOUND supplies an equivalent of 262% protein, it leaves more room for additional minerals, vitamins and

QUALITY OF JOHN DEERE PRODUCTS

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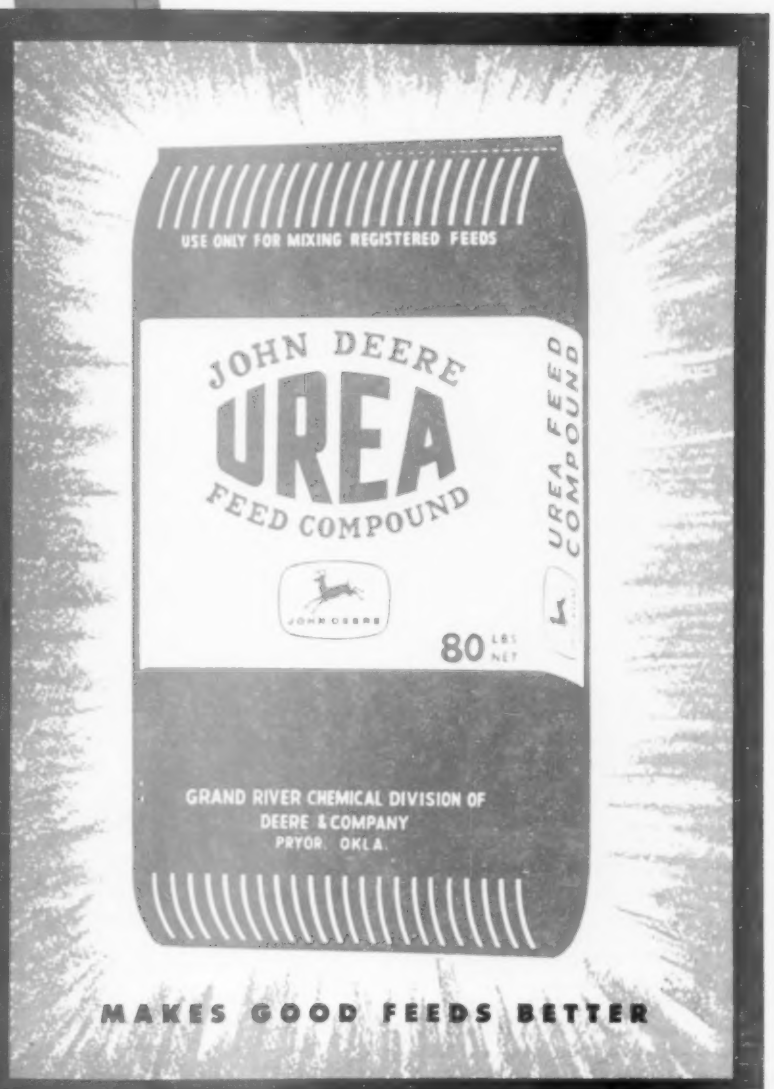


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energy in your feeds. Such high concentration saves on valuable storage space too.

No stone has been left unturned to produce the kind of high quality, free flowing urea you demand in your quality feeds.

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## WHAT'S NEW IN FEEDING?

# Putting Research to Work

**By Spencer H. Morrison, Ph.D., D.V.M.**

### Observations with Growing Chickens on the Effects of Sounds of Varying Intensities

● W. J. Stadelman, State College of Washington; Poultry Science, Vol. 37, No. 4, pp. 776-779.

**ABSTRACT**

The sound used in this study on broiler chicks was tape recordings of both jet and propeller driven aircraft.

Two experiments were conducted in brooder houses having separate pens of about 200 sq. ft. of floor space. The sound was measured at a level 6 in. above the floor in five different pen locations, and varied between pens from 80 to 115 decibels of intensity. The sound was supplied in the experimental pens from the start of brooding until the experiments were terminated at nine weeks of age. Sound was supplied for five minutes out of every 20 minutes from 8 a.m. to 8 p.m. On every third night, the sound was supplied throughout tht night on a schedule of five minutes out of each 30 minutes.

A control pen shielded from the sound source and in a different location had a sound level of about 65 decibels. All birds were fed the same type of rations and managed in a like manner with the exception of the sound level.

The results of these two experiments indicated that the levels of sound used in these trials did not affect body weights when analyzed by means of analysis of variance. Feed efficiency, mortality and meat yield were likewise unaffected.

A third experiment was conducted in a large single pen broiler house with varying sound intensities from 118 to 100 decibels. All sound was withheld from this group of 2400 chicks for the first 31 days. Then they were subjected to sound continuously for four hours. No further sound was supplied to them until 45 days of age. At this time they were subjected to the same sound level program as in the previous two experiments. This schedule was maintained for 10 days. Due to equipment failure, the sound was not on for three days. The schedule was then resumed until the chicks were 10 weeks old.

The results of the third experiment indicated that when the sound was first turned on, the birds reacted violently; crowding resulted in only one bird's smothering, however. When the sound was again applied at 45 days of age, there was again a reaction, but not so violent as the previous one. After the sound had been on for 3 days, there was no attempt to run or crowd away from the speakers. When the equipment broke down and was again turned on, the birds showed a tendency to run during the first few "fly-overs" of plane sound.

**COMMENT**

This is an interesting bit of information which shows that birds can become used to the sound of flying aircraft. Loss in chickens is much more likely to occur from an isolated low level fly-over than from the continuous noises resulting from close proximity to an airfield. Many broiler growers purposely play radios, etc., to accustom the birds to noise of all descriptions—apparently a good idea.

●

### Report of a Field Trial on the Use of Phenothiazine Preparations in Feedlot Cattle

● N. F. Baker and P. H. Allen, University of California; Journal of the American Veterinary Medical Assn., Vol. 133, No. 5, pp. 265-268, Sept. 1, 1958.

**ABSTRACT**

One hundred and ninety four yearling steers were placed in a feedlot and fed pea silage and a mixture of alfalfa and volunteer hay for a period of 80 days. They were then placed on a fattening ration and brought to full feed. The experiment continued

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the purified ANTIBIOTIC complex—
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# NOW FROM KRAFT!

In years past, farmers, poultry growers and dairymen have bought millions of pounds of Consolidated's milk by-product feeds. They kept on buying them, because they got excellent results. And that repeat buying made *good business for feed dealers.*

Now there's been a business union between Consolidated and Kraft. This is a natural. For who has more know-how about milk and its by-products than KRAFT?

All these popular, proven and profitable feeds—KAFF-A products, PEX products—are now made by Kraft. And backed by Kraft's famous reputation—for turning out top-quality products that live up to the claims made for them.

Kraft's size and widespread plant facilities make for

until the "finished" animals in each group were cut out for slaughter.

After being in the feedyard one month, the animals were divided into four groups at random and subjected to the following treatments:

(1) Three pounds of a carob-flour-phenothiazine compound were spread over the daily ration of approximately 15 lb. per animal. This was continued for three days and was calculated to furnish a total dosage per animal of 60 grams of phenothiazine.

(2) Three gallons of flavored phenothiazine liquid preparation were spread over the surface of the daily pea silage allowance and stirred thoroughly with a pitchfork. This was equivalent to a single 60 gram dose of phenothiazine per head.

(3) Each animal was drenched with 60 grams of phenothiazine.

(4) Controls, untreated.

The animals in all groups were weighed at five intervals throughout the trial, after treatment. Fecal samples were taken from each group at the start of the trial, by examining 10 selected subjects for quantitative parasite egg counts. At the time of slaughter, the abomasa and small intestines of 10 representative animals were examined and nematode counts obtained. Because of the low parasite egg counts at the start of the trial and the limited value of egg counts in the evaluation of phenothiazine as an anthelmintic, no further fecal examinations were made. There were no significant differences between mean egg counts of the four groups, at the start of the experiment.

Both the flavored phenothiazine liquid and the carob-flour-phenothiazine mixture were very unpalatable to feedlot cattle under the conditions of this test; however, no sign of toxicity from phenothiazine was observed by any of the methods of administration used. No increased weight gains were shown by the cattle under any method of treatment over the controls. This may be due to the low parasite load initially of the cattle, or else the method of treatment did not remove sufficient parasites to allow treated animals to exhibit increased gains.

All the experimental treatments removed parasites, and the animals which were drenched had significantly less worms at time of slaughter in the abomasum, but not the small intestine, than the controls. The other two phenothiazine preparations administered in the feed were less effective in worm removal, the carob-flour-phenothiazine mixture being slightly superior to the flavored liquid phenothiazine product. Particle size of the phenothiazine products was probably important in the difference in results. None of the products was economical to use under the conditions of the experiment.

**COMMENT**

Highly variable results have been reported by administration of phenothiazine in the feed or in mineral mixtures by various workers. (Cauthen, 1957; Todd, 1957; Moyer et al., 1955; Kinkead et al., 1957). If the cattle can be induced to consume sufficient amounts of the medicated feed or mineral to attain proper dosage levels, the results are usually good; if not—they are poor. It is a question in many veterinarians' minds whether or not all cattle should be treated for parasite removal—that this opinion is not shared by all is well known (Todd, 1957). Most veterinarians prefer drench methods to all others if proper equipment is available to handle the cattle. The available experimental results seem to generally back up their opinions.

A newly developed oat product-molasses - phenothiazine - containing feed method has been developed recently (Todd, 1957). In preliminary trials, the palatability of this material was superior to others tested in both dairy and beef cattle. It has not been evaluated in extensive experiments with either beef or dairy cattle.

Harry R. Gillespie

**JOINS VALLEY MILLS—Harry R. Gillespie has joined Valley Mills of Vicksburg, Miss., as merchandising manager, announced A. E. Welbourne, sales manager. Mr. Gillespie will be in charge of the company's advertising and feed sales promotion and will supervise the Valley Mills farm stores in Mississippi and Louisiana. He was previously with Universal Mills of Fort Worth, Texas, where he was responsible for feed sales in Mississippi. Prior to that he was sales manager of the feed division for Fant Milling Co. of Texas.**

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economical manufacturing and efficient distribution. One result is that the price of new improved KAFF-A has been reduced nearly ⅓ below its price of two years ago. The price of PEX has also been lowered.

**POWERFUL ADVERTISING** featuring reports by Lloyd Burlingham, famous farm newscaster, will appear in leading farm magazines through the peak demand season this fall.

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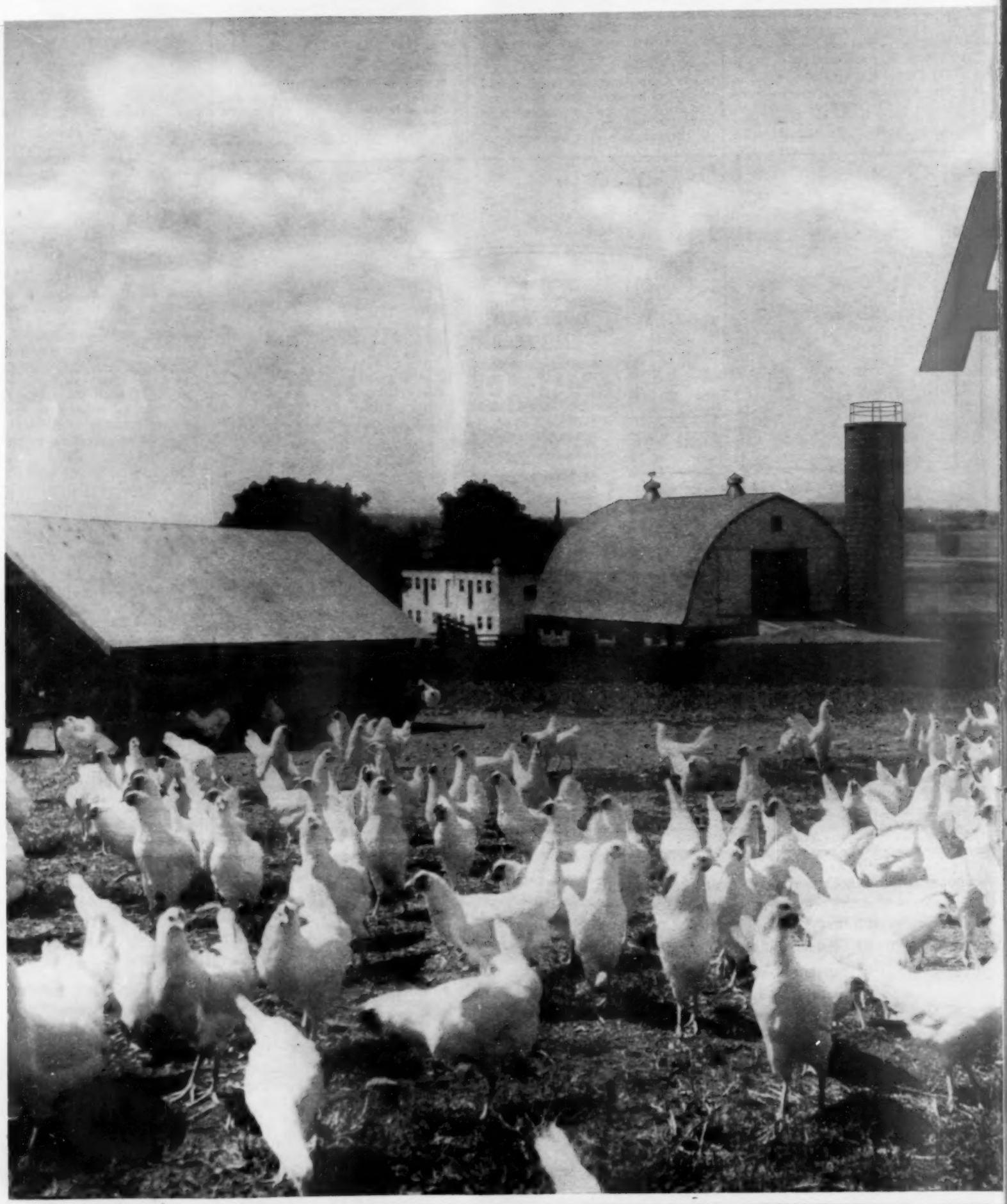

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# for continuous feeding to laying hens

# ARZENE*

Poultrymen in certain areas where laying-house coccidiosis is a problem know how costly this disease can be. They have long wanted a coccidiostat that *could be fed continuously* as an aid in the prevention of coccidiosis.

Now . . . for the first time — you can serve these customers. You can incorporate ARZENE. This is the first and only proved coccidiostat for continuous feeding to laying hens.

ARZENE is, in fact, a multi-purpose coccidiostat. Laboratory and field trials have proved its effectiveness in preventing coccidiosis not only in layers but also in broilers and replacement chicks.

In addition, ARZENE promotes feed efficiency in replacement flocks and broilers . . . improves growth and pigmentation in broilers . . . satisfies the need for an arsenical.

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ARZENE comes to you at a cost *lower* than that of any other coccidiostat. Write for detailed information on ARZENE or talk to your Cyanamid field representative.

## ARZENE
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*ARZENE is American Cyanamid Company's trademark for arsenosobenzene.

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## Plans Described for Rebuilding Milling School Facilities

MANHATTAN, KANSAS — Dr. John A. Shellenberger, head of the department of flour and feed milling industries at Kansas State College, discussed the reconstruction of department facilities destroyed a year ago by fire at the recent 28th annual tri-section meeting of the American Association of Cereal Chemists at Manhattan.

Architects are preparing detailed specifications for the new building, he said, and it is anticipated that bids will be requested in December.

Plans include a three-story structure of 7,560 sq. ft. adjacent to East Waters Hall. In will include a chemical laboratory for students training in evaluation of flour and feed quality, and research laboratories and offices.

It will connect East Waters Hall, the U.S. Department of Agriculture's wheat quality laboratory, and the technology building.

The area adjoining the feed technology building will house grain storage and cleaning house facilities, and a pilot plant flour mill. That part of the new structure will be about the same height as the feed technology building.

The cleaning house and pilot mill areas will be supplied with the newest types of equipment, including a pneumatic system to convey materials. Milling equipment will also be installed on a unit operation basis to permit student instruction without necessitating operation of the entire pilot plant.

In a two-story structure in front of the cleaning house and mill area, space will be provided for a pilot plant bakery, research laboratories, offices, shops, cold temperature rooms, conference room and re-establishment of the Swanson reading room.

The building and fixed equipment in the laboratories and offices are financed by state appropriations of nearly $1 million. The total cost of the building and equipment will be approximately $1,400,000.

## Pellet Plant Burns

ECHO, ORE.—Butter Creek Pellet Mills, located about eight miles south of here, burned to the ground recently. The loss included some 50 tons of pellets, completed and ready for shipment. Owners Louis LeTrace and Bill Kilkenney, both of Echo, were unable immediately to give an estimate on loss but have instituted plans for rebuilding the facility. The plant had been working two shifts a day, eight men on a shift, preparing a shipment for a Hawaiian outlet.

### STORAGE BIN COMPLETED

BUTTERFIELD, MINN.—A new, 80,000-bu. storage bin has been completed for the local Commander Elevator here. Total capacity is now 120,000 bu. The new space will be used for soybean storage.

Dr. Earl F. Huffman

## S & O Products Names New Technical Director

MARSHALLTOWN, IOWA — Dr. Earl F. Huffman has been appointed technical director in charge of nutrition, research and technical development for S & O Products, Inc., Marshalltown, it was announced recently by company officials.

The firm manufactures mineral feeds for livestock under the brand name of So-Rite and distributes in 17 western and midwestern states. The announcement said the firm is in the process of developing and acquiring several new products "which will produce maximum health and growth in livestock."

Also in process is the production development of a poultry, pig and pet nutrient-base vermifuge which, the announcement said, "has produced greatly accelerated weight gains in test animals compared with animals wormed with conventional wormers."

Dr. Huffman attended the college of veterinary medicine at Michigan State University and took graduate work in pathology and bacteriology at the University of Wisconsin. He also holds a bachelor's degree in business and sales management. He served two years with the U.S. Department of Agriculture in research and disease eradication and practiced several years in Wyoming and Michigan. More recently, he spent two years with Armour & Co. as manager of professional relations and technical consultant to the sales division of the Armour's veterinary laboratories.

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*In publishing, as in the formula feed industry,*

# Measurements are important

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## Cooperative Obtains Omaha Alfalfa Plant For Grain Storage

OMAHA—The former Maney Milling Co. plant here, used as a dehydrated alfalfa blending and storage facility since 1952, has been purchased by the Westcentral Cooperative Grain Co., Omaha.

Westcentral will take possession of the 850,000 bu. plant Jan. 1, 1959, and plans to use the facilities for grain storage, according to Aksel Nielsen, general manager. There is room for future expansion, Mr. Nielsen said, although none is planned at present. The concrete and brick structure is located on the Chicago, Great Western tracks.

The Maney plant was bought by National Alfalfa Dehydrating and Milling Co. in 1954 from another alfalfa dehydrating firm which had acquired it two years earlier from John J. Vanier. The Vanier interests bought the mill in 1949. Flour milling equipment was removed to permit conversion of the mill to an alfalfa blending plant.

## Two Sales Changes Announced by Bemis

ST. LOUIS — John R. Cullinane, resident manager of the paper specialty plant of the Bemis Bro. Bag Co. in Crossett, Ark., has been appointed sales manager for all paper specialty plants, with headquarters in St. Louis. He is being succeeded in Crossett by J. S. Heard, former resident manager of the Albion, N.Y., paper specialty plant.

Mr. Cullinane is a graduate of the University of Illinois, where he received a bachelor of science degree in economics and business administration. He joined Bemis in 1947 and was assigned to the Albion plant, later being transferred to St. Louis. In 1956 he was appointed to the position he held until his new assignment.

Mr. Heard attended New York schools and joined Bemis in 1949 as a salesman out of Albion. He was made Albion sales manager in 1956.

## W. G. Henderson Joins Southeastern Group

RICHMOND, VA.—Walter Glenn Henderson, Chamblee, Ga., has been appointed director of organization for the Southeastern Poultry & Egg Assn., Harold E. Ford, Southeastern executive secretary, has announced.

Mr. Henderson will be in charge of the association's field service program and will serve as liaison between industry men and the association's Decatur, Ga., office on problems affecting the poultry industry in the Southeast.

Mr. Henderson replaces Oliver Terriberry, who has accepted a position as south Georgia sales representative for the W. D. Faust Hatchery, Oneonta, Ala.

Page Edmunds

## Page Edmunds Named To New Grace Post

BALTIMORE — Appointment of Page Edmunds as assistant general manager of chemicals in the W. R. Grace & Co. Davison chemical division was announced by R. D. Goodall, vice president and general manager of chemicals. Concurrently, Mr. Edmunds has been named vice president of Davison Chemical Co., Ltd., the Canadian affiliate of the division.

Formerly Mr. Edmunds was general sales manager, petroleum chemicals. In his new post manufacturing, sales, and technical service managers will report to him.

Mr. Edmunds, a native of Baltimore, is a graduate of the Johns Hopkins University, where he studied chemical engineering. He has been with Davison since completing his formal education in 1939, except for the 1941-45 period when he was in the U.S. Navy.


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# Formula Feed Warehousing Costs

## A Study in Improving Efficiency in Handling Sacked Feeds

**By Dr. V. John Brensike**
**Agricultural Marketing Service**
**U.S. Department of Agriculture**

*EDITOR'S NOTE: This article is the text of a newly issued U.S. Department of Agriculture report on the second phase of a study of the costs of operating formula feed warehouses. USDA points out that it is conducting this research to determine ways of increasing operational efficiency, thus reducing marketing costs. The first phase of this study was reported in "Case Study of Labor Costs and Efficiencies in Warehousing Formula Feeds," Marketing Research Report No. 205, issued by USDA in November, 1957 (Feedstuffs, Dec. 14, 1957, page 18).*

*This study was made by Richard Muther & Associates, industrial management consultant, Kansas City, under contract with USDA. This contractor also made time and motion studies under a separate contract with the Midwest Feed Manufacturers Assn., Kansas City. Data were made available by the association for the present analyses. The Feed Production School Committee of the association assisted in planning and organizing the study.*

*The author of this report is agricultural economist in the Market Organization and Costs Branch of USDA's Marketing Service. He is well known for his considerable amount of research in the feed field.*

**HIGHLIGHTS:** Calculated labor costs in a model warehouse for formula feeds, compared with actual costs in six representative warehouses, indicate the possibility of reducing these labor costs to the industry by approximately one third. These savings appear to be the result of improved warehouse design, better location of feed items, and some influence of an increased rate of flow of bags of feed.

The importance of interior remodeling and of analysis of item location is apparent, since the time used in transporting feeds was reduced relatively more than manual-handling time.

The model warehouse design was developed in a research project by the Agricultural Marketing Service, U.S. Department of Agriculture, in cooperation with the feed industry.

**INTRODUCTION:** Previous studies of the formula-feed industry have analyzed average operating costs[1] and established labor standards[2] for the services and operations performed, on a per-ton basis. Comparisons of the labor costs and labor standards not only indicated that the warehousing operation accounted for about one third of the industry's labor sis if the warehouse work time was labor savings could be achieved in this operation (Table 1).

The Midwest Feed Manufacturers Assn., through its Feed Production School Committee, and the U.S. Department of Agriculture decided to make a coordinated study of warehousing of formula feeds. In this study, two separate phases were developed, one by the association and one by the department. The department's study was designed to (1) analyze labor use, including both work and delay time, in three types of warehousing operations, namely, by hand truck, lift truck, and belt conveyor; and (2) design and reconstruct operating practices in a model mill, for use as a standard of comparison for operating warehouses.

Findings concerning the first objective of the department's study already have been reported.[3] This report indicated that manual handling operations consume about 45% of the average worker's time; transport, about 26%, and idle or delay time, 29%. More than three fourths of the idle or delay time resulted from occurrences beyond the control of the worker; such delay time included waiting for a car or truck, waiting for a changeover, idle time due to intermittent work flow, and waiting for a previous operation. Each of these categories is under the control of management. The report also indicated that in a 100-ton-per-day operation, warehouses using forklift trucks had a smaller proportion of delay time than did the other types, and also they could, under existing operating conditions, handle a larger tonnage per man-hour.

A detailed time and motion analysis of the warehouse work time was made in the association's study. In this analysis, each operation was broken into the individual motions involved and was either timed or measured in terms of standard motion data.

**Objectives:** The objectives of this study were to determine the worktime required to operate the warehousing phases of a theoretical or model mill and, by using these results as a standard, to determine the influence of mill design and item location on the operating efficiency of mills included in the study.

This model mill can be used as a tool of management in analyzing the efficiency of warehouses and in determining the probable savings if a new or redesigned warehouse were built or more emphasis were placed upon planning the location of items in the warehouse.

**Methodology:** Both of these studies were conducted under contract by the same contractor in the same six representative mills of which case studies were made. Two of the warehouses were operated with two-wheel hand trucks, and two with forklift trucks; the other two were basically conveyor-belt operations, although, since 40 to 50% of the feed was moved into the warehouse for storage before shipping, some other method had to be used in addition to movement by conveyor.

Each of these warehouses was chosen by industry people as representative of its particular type of operation. The contractor visited about 25 of these representative warehouses, located within 200 miles of Kansas City, Mo., to determine those which were most representative and willing to cooperate. The universe from which the industry association was determining representativeness was its own members and enrollees in the previous Production Schools. Thus, it is probable that these plants represent better-than-average warehouse operations when the entire industry is considered (Table 1).

Each of these warehouses handled approximately 100 tons of mixed feed per eight-hour day of operation. An

[1] Brensike, V. J., and Askew, W. R., Costs of Operating Selected Feed Mills, Mktg. Res. Rept. No. 79, U.S. Dept. of Agriculture, Washington, D.C., February, 1955.

[2] Midwest Feed Manufacturers Assn., In-Plant Cost Standards, Proceedings 1956 Feed Production School, Kansas City, Mo.

[3] Askew, W. R., Vosloh, C. J., and Brensike, V. J., Case Study of Labor Costs and Efficiencies in Warehousing Formula Feeds, Mktg. Res. Rept. No. 205, U.S. Dept. of Agriculture, Washington, D.C., November, 1957.

**TABLE 1. Production man-hours per ton of formula feed produced in plants with different volumes, by cost centers, 1956.**

| Cost Centers | 7,500 to 10,000 tons per year: Industry average 1/ | Better-than-average plants 2/ | Cost standards developed by industry 3/ | 25,000 to 35,000 tons per year: Industry average 1/ | Better-than-average plants 2/ | Cost standards developed by industry 3/ | 50,000 to 75,000 tons per year: Industry average 1/ | Better-than-average plants 2/ | Cost standards developed by industry 3/ |
|---|---|---|---|---|---|---|---|---|---|
| | Man-hours | Man-hours | Man-hours | Man-hours | Man-hours | Man-hours | Man-hours | Man-hours | Man-hours |
| Ingredient receiving | .352 | .275 | .162 | .230 | .154 | .080 | .154 | .143 | .071 |
| Grain processing | .128 | .100 | .038 | .105 | .070 | .019 | .056 | .052 | .008 |
| Mixing | .608 | .475 | .341 | .357 | .238 | .145 | .238 | .221 | .122 |
| Pelleting | .160 | .125 | .119 | .126 | .084 | .075 | .084 | .078 | .046 |
| Packing | .480 | .375 | .175 | .336 | .224 | .109 | .210 | .195 | .087 |
| Warehousing | 1.216 | .950 | .671 | .735 | .490 | .309 | .490 | .455 | .264 |
| Maintenance | .256 | .200 | .160 | .210 | .140 | .150 | .168 | .156 | .126 |
| Foreman | 4/ | 4/ | .133 | 4/ | 4/ | .090 | 4/ | 4/ | .080 |
| Total | 3.200 | 2.500 | 1.799 | 2.100 | 1.400 | 0.967 | 1.400 | 1.300 | 0.804 |

1/ Marketing Research Report No. 79, brought up to date by Census trends in production labor efficiency. Breakdown estimated from the better-than-average plants.
2/ Analysis of basic data purchased from the Midwest Feed Manufacturers' Association from 1956 study.
3/ 1956 Proceedings of the Midwest Feed Production School.
4/ Included in the relevant cost center.

**TABLE 2. Estimated proportion of a warehouse worker's time spent in specific types of work and delay.**

| Operation | Forklift: Percentage of total observations | Estimated standard error of proportion 1/ | Hand truck: Percentage of total observations | Estimated standard error of proportion 1/ | Conveyor belt: Percentage of total observations | Estimated standard error of proportion 1/ |
|---|---|---|---|---|---|---|
| | Percent | | Percent | | Percent | |
| Manual handling | 48.7 | .014 | 39.2 | .014 | 46.9 | .014 |
| Load | 14.8 | .010 | 21.1 | .012 | 9.5 | .008 |
| Unload | 17.6 | .011 | 9.7 | .009 | 14.5 | .010 |
| Prepare, close car, and check | 5.2 | .006 | 3.4 | .005 | 5.8 | .007 |
| Handle ingredients | 2.8 | .005 | 0.9 | .003 | 4.0 | .006 |
| Cleanup and other work | 8.3 | .008 | 4.1 | .006 | 13.1 | .010 |
| Transport | 26.1 | .013 | 33.9 | .014 | 17.2 | .011 |
| Direct to transport | 2.4 | .004 | 5.9 | .007 | 0 | |
| To warehouse | 3.2 | .005 | 10.2 | .009 | 2.8 | .005 |
| Warehouse to transport | 9.3 | .008 | 7.3 | .008 | 6.8 | .007 |
| Relocate in warehouse | 1.7 | .004 | 0 | | 2.6 | .005 |
| Transport empty | 9.5 | .008 | 10.5 | .009 | 5.0 | .006 |
| Idleness and delay | 25.2 | .013 | 26.9 | .013 | 35.9 | .014 |
| Outside worker's control | 18.2 | .011 | 22.1 | .012 | 25.3 | .013 |
| Within worker's control | 7.0 | .007 | 4.8 | .006 | 10.6 | .009 |
| Total | 100 | | 100 | | 100 | |

1/ The percentage of total observations plus or minus these standard errors results in a range within which, in 2 chances out of 3, the true meaning will be found.

earlier study had indicated that costs in the industry tend to level out considerably after a volume between 20,000 and 30,000 tons of mixed feed per year is reached. Each warehouse was studied on a Tuesday, Wednesday and Thursday in June, July or August, 1957.

**Reliability of time sample:** The work sampling observations made in each mill were taken at random times throughout each of the prescribed eight-hour working days. Observations were taken instantaneously from prescribed areas of the warehouse. The travel route from observation point to observation point was altered frequently to minimize any anticipation by the workers. Observations were made for an average of about six workers during each trip through the warehouse. Thus, a total of 1,200 observations were taken for each type of warehouse, or 600 in each individual warehouse. It is believed that similar types of warehouses can be combined and the total observations considered, since the 600 observations in each of the hand-truck warehouses resulted in nearly identical information. The same is true for the observations in each of the forklift warehouses. Only in the two conveyor warehouses did any significant differences occur in some of the work categories. These differences arose because hand-trucks were used to supplement the conveyor belt in one plant, while forklift trucks were so used in the other.

Combining the observations from similar warehouses, the estimated standard error of each of the work or delay categories, shown in Table 2, ranges from ± 1.4% for 48.7% of the observations to ± 0.3% for 0.9% of the observations. If individual warehouses are considered separately, the estimated standard errors of these proportions become ± 2.0% and ± 0.4%, respectively.

**Model Warehouse:** A model warehouse design, drafted on the basis of earlier studies, was further refined as a result of the time and motion analysis (Fig. 1). It represents not an ideal warehouse design, but rather a sound arrangement based upon current practices. Specifications which this model warehouse is designed to meet are:

1. Mill capacity, 100 tons per eight hours.

2. Warehouse to hold 5-day supply of feed (500 tons) at approximately 70% of warehouse space utilization.

3. Movement of feed as follows:

a. 75 tons from the takeoff belt or table into warehouse storage.

## MODEL WAREHOUSE LAYOUT

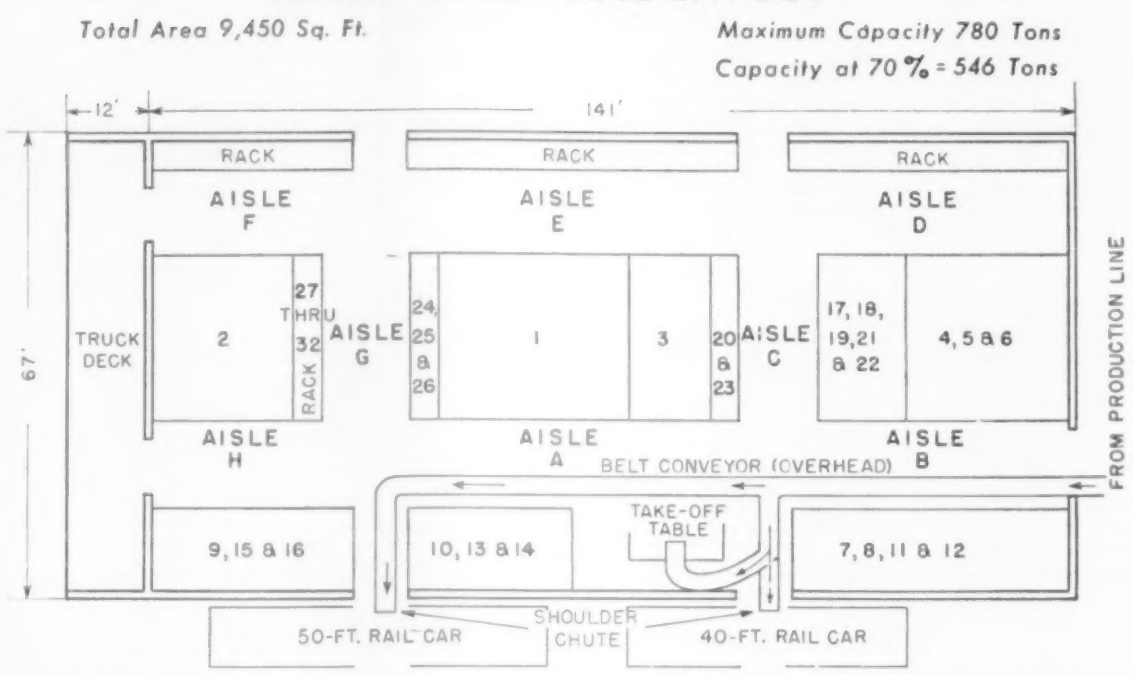


**FIGURE 1. The numbers 1-32 represent the number of items handled in the warehouse in order of rank, with the largest selling item as number 1. The remaining 50 slow-moving items will be stored in the racks to facilitate partial pallet handling.**

b. 25 tons directly from the takeoff facility into railroad cars.

c. 50 tons from warehouse storage to road trucks for shipment.

d. 25 tons from warehouse storage to railroad cars for shipment.

4. Feed produced and stored is made up in the following manner:

a. Total number of formulas manufactured, 80.

b. Bag sizes and quantities: 5% of total feed packed in 25-lb. bags; 75% of total feed packed in 50-lb. bags; 20% of total feed packed in 100-lb. bags.

c. Several feeds are manufactured in different forms, such as mash, pellets and crumbles. When the different forms are considered, the 80 formulas become 100 different types of feeds.

Some feeds are packed in more than one size of bag, making the number of different items—that is, different bag sizes and different forms—a total of 130 items or varieties.

5. Aisles 12 ft. wide.

6. Add 25% to forklift times for partial pallets, double handling, etc.

7. 750 bags are transferred from one pallet to another.

**TABLE 3. Tables of standard times: Times for handling bags with pallets, 2,000 lb. per pallet load.**

| Code | Operation | Bag size in pounds | Man-hours per Bag | Man-hours per Ton | Bags per minute |
|---|---|---|---|---|---|
| L1A | Load pallet with loading guide from takeoff table | 25 | .00074 | .0592 | 22.5 |
| L1B | | 50 | .00085 | .0340 | 19.6 |
| L1C | | 100-1 man | .00149 | .0298 | 11.2 |
| L2A | Load pallet without loading guide from takeoff table | 25 | .00078 | .0624 | 21.3 |
| L2B | | 50 | .00089 | .0356 | 18.7 |
| L2C | | 100-1 man | .00149 | .0298 | 11.2 |
| L3A | Load bag from one pallet to 2nd pallet | 25 | .00098 | .0784 | 17.0 |
| L3B | | 50 | .00120 | .0480 | 13.9 |
| L3C | | 100-1 man | .00188 | .0376 | 8.9 |
| L3D | | 100-2 men | .00193 | .0396 | 17.3 |
| U1A | Unload bag from pallet and stack | 25 | .00136 | .1088 | 12.3 |
| U1B | | 50 | .00150 | .0600 | 11.1 |
| U1C | | 100-1 man | .00276 | .0552 | 6.0 |
| U1D | | 100-2 men | .00170 | .0680 | 9.8 |

| Code | Operation | Unit | Man-hours Per Unit |
|---|---|---|---|
| F1 | Travel up to 20 feet per trip | Foot | .00009 |
| F2 | Travel from 20 to 50 feet per trip | Foot | .00008 |
| F3 | Travel from 50 to 100 feet per trip | Foot | .00006 |
| F4 | Travel over 100 feet per trip | Foot | .00005 |
| F5 | Turn in, stack in or get from 1st tier and back out | Pallet | .0063 |
| F6 | Turn in, stack in or get from 2nd tier and back out | Pallet | .0070 |
| F7 | Turn in, stack in or get from 3rd tier and back out | Pallet | .0078 |
| F8 | Turn in, stack in or get from 4th tier and back out | Pallet | .0087 |
| F9 | Turn in, stack in or get from 5th tier and back out | Pallet | .0096 |
| F10 | Turn in, pick up unobstructed pallet and back out | Pallet | .0029 |
| F11 | Run in straight, pick up unobstructed pallet and back out | Pallet | .0025 |
| F12 | Turn in, deposit pallet in unobstructed location and back out | Pallet | .0025 |
| F13 | Run in straight, deposit pallet in unobstructed location and back out | Pallet | .0021 |
| F14 | Run into rail car, deposit or obtain pallet and back out | Pallet | .0056 |
| F15 | Run into truck, deposit or obtain pallet and back out | Pallet | .0044 |
| F16 | Turn in to "take it or leave it load," obtain and back out | Load | .0051 |
| F17 | Run straight to "take it or leave it load," obtain and back out | Load | .0047 |
| F18 | Run into rail car, deposit "leave it" load and back out | Load | .0070 |
| F19 | Get on or off lift truck and go to or from front of pallet | Occurrence | .0020 |
| F20 | Obtain and position, or, set aside roll in dolly for pallets--2 men | Occurrence | .0110 |
| F21 | Push loaded dolly to 1st tier--2 men | Occurrence | .0053 |
| F22 | Push loaded dolly to 2nd tier--2 men | Occurrence | .0065 |
| F23 | Push loaded dolly to 3rd tier--2 men | Occurrence | .0076 |
| F24 | Push loaded dolly to 4th tier--2 men | Occurrence | .0088 |
| F25 | Push empty dolly from 1st tier--2 men | Occurrence | .0036 |
| F26 | Push empty dolly from 2nd tier--2 men | Occurrence | .0046 |
| F27 | Push empty dolly from 3rd tier-2 men | Occurrence | .0056 |
| F28 | Push empty dolly from 4th tier--2 men | Occurrence | .0066 |

Results of the association's time and motion analysis, a sample of which appears in Table 3, were then combined into the tasks necessary to operate this model warehouse.

**Comparison—Model vs. Actual:** The model mill specifications 1, 4, 5, 6 and 7, just described, were based upon the averages found to exist in the six case-study mills. The movement of feed (item 3) is almost identical with the actual movement in the two forklift warehouses, and the industry tends to have somewhat smaller warehouses than the model mill (item 2). Therefore, a valid comparison can be made between the model operation and the actual operations. This is especially true since the time and motion results were based upon the operations performed by the same men, in the same mills, and during the same time of year as the actual operation. A comparison of this type should result in some indication of the size of the potential labor efficiencies and should indicate that these worktime efficiencies must result primarily from the following:[4]

1. Improving the warehouse design and layout.

2. Decreasing the distance necessary to transfer items to the warehouse and then out by giving more consideration to the frequency of movement, including ease of partial pallet handling.

3. Increasing the rate of flow of bags from the packer. This is a factor even though delays for changeover, intermittent work flow, and wait for previous operation (two thirds of total idle and delay time) are excluded from the work sampling items appearing in Table 4. Only worktime is considered.

It appears that these factors can improve the warehouse worker's efficiency while in a work status about one third above that found in the study of the six representative mills (Table 4). Warehouse workers in the six mills handled about 5.2 tons of bagged feed per man-hour. In the two forklift-truck warehouses, 5.5 tons of feed were handled per man-hour, and in the model mill 7.3 tons of feed could be handled. Even the model warehouse could not operate in many areas and retain the perfect item location assumed because of seasonal shifts in demand. These imperfections, however, were recognized in establishing the 25% allowance for partial pallet handling, etc.[5]

Further analysis of this comparison of model vs. operating labor inputs and tonnage of outputs shows that the model mill increases the efficiency of the transport time much more than it does manual-activity time (Table 5). Transportation represented about 35% of a worker's time while in work status, either on the basis of the six mills studied or in the forklift truck warehouses. In the model mill, transportation requires about 24% of the worktime.

Since many warehouses in this

[4]If the errors inherent in each type of study are at a minimum or are assumed to be excluded.

[5]In some plants; a larger allowance may be needed for these problems.

**TABLE 4. Volume handled in bags per unit of worktime (1).**

| Item | Work sampling study: Six-mill average | Work sampling study: Forklift average | Model warehouse: Three-man status 2/ |
|---|---|---|---|
| Tons per man-hour | 5.20 | 5.45 | 7.28 |
| Man-hour per ton | .201 | .185 | .137 |
| Man-minutes per ton | 12.1 | 11.1 | 8.22 |

1/ Idle and delay times excluded.
2/ Slightly more than required, but it retains full man operations and serves to cover cleanup and related work which is covered in the work sampling data.

**TABLE 5. Distribution of worktime (1).**

| Function | Work sampling study: Six-mill average | Work sampling study: Forklift average | Model warehouse |
|---|---|---|---|
| | Percent | Percent | Percent |
| Manual activities | 62.6 | 64.5 | 76.5 |
| Transporting | 37.4 | 35.5 | 23.5 |
| Total | 100.0 | 100.0 | 100.0 |

1/ Idle and delay time excluded.

size of feed mill are comparable to or slightly smaller than the model, the relatively greater decrease in travel time indicates the importance of remodeling and an analysis of item location. Most of these potential efficiencies appear to result from changes in these two factors rather than from the basic warehouse size or design. Certain warehouses, of course, have the added problems and further potentials of increasing efficiency which result from a poor or outmoded basic warehouse design or size.

In a problem such as this, remodeling or new construction costs must be considered. If the potential savings shown in this report are all contingent upon building a new warehouse, the savings, valued at $1.50 per hour, will support an investment over a 30-year period of about $67,000 per shift. Even in these warehouses, however, this study indicates that sizeable worktime efficiencies may result from minor remodeling and analysis of item location.

## PENB Leader-Planning Conferences Completed

BOSTON — A four-day series of New England state Poultry & Egg National Board leader-planning conferences to plan financing for promotion of the poultry industry's products has been completed by Kenneth K. Heideman, Chicago, PENB director of membership and finance.

State PENB committee general chairmen presided at their respective state sessions attended by leaders of the various segments of the industry.

Leaders summarized the purposes and activities of state poultry organizations. Miss Eleanor W. Bateman, manager of the New England branch, briefly reviewed PENB regional promotion work.

Mr. Heideman explained the purpose of PENB and pointed out that funds collected are ear-marked for promotion of eggs, chicken, turkey, ducks, etc., according to the segment of the industry making the investment. He described the recent reorganization of PENB's directorate and operation.

The leader-planning groups next planned expansion of state PENB committees to include all industry leader representation to work on both the immediate and long range membership-finance program.

A conference in the near future of New England state PENB committee membership-finance chairmen was proposed as desirable because of economic problems and other problems common to the six-state area.

Presiding at the combined Massachusetts-Rhode Island session at Framingham, Mass., were Douglas J. Hayes, Sterling, Mass., and Eugene W. Wright, Slatersville, R.I.

Presiding at the other meetings were Chester Bacheller, Limington at Augusta, Maine; William S. Rent, Kingston at Concord, N.H.; Edward S. Crane, East St. Johnsbury at White River Junction, Vt., and George Warshaw, Clinton at Hartford, Conn.

## Book Being Published On Plant Proteins

NEW YORK—A book that provides "a broad and international coverage of the problems and practices involved in the manufacture and use of processed plant protein foodstuffs" is being published by Academic Press, Inc., New York.

The book has been edited by Aron M. Altschul, U.S. Department of Agriculture at New Orleans, La.

According to the publisher, the purpose of the book is: (1) to present, in one volume, comprehensive information on the source, composition, and uses of processed plant protein foodstuffs; (2) to provide the commercial processor of plant proteins with the types of information that will help improve his products; (3) to guide the feeder and food purveyor in obtaining maximum value from plant protein foodstuffs, and (4) to give the nutritionist, biochemist, and clinician a background on sources and handling.

Contributors to the book represent scientific and medical institutions, universities, agricultural experiment stations and processing and feeding industries.

Pre-publication price of the book is $22; post-publication price is $26.

## Georgia Reports Flavor Tests with Calves

MACON, GA.—Researchers at the University of Georgia Experiment Station reported recently on feed flavor tests.

In a project led by Dr. W. J. Miller, associate professor of dairying, four experiments were conducted in which anise oils were added to different calf starter feeds.

In all instances, Dr. Miller said, the anise oil depressed the palatability of the starter.

He said that when 2 lb. of anise oil per ton of feed were added, the palatability of the starter was depressed more than when only ½ lb. was added but both levels were detrimental.


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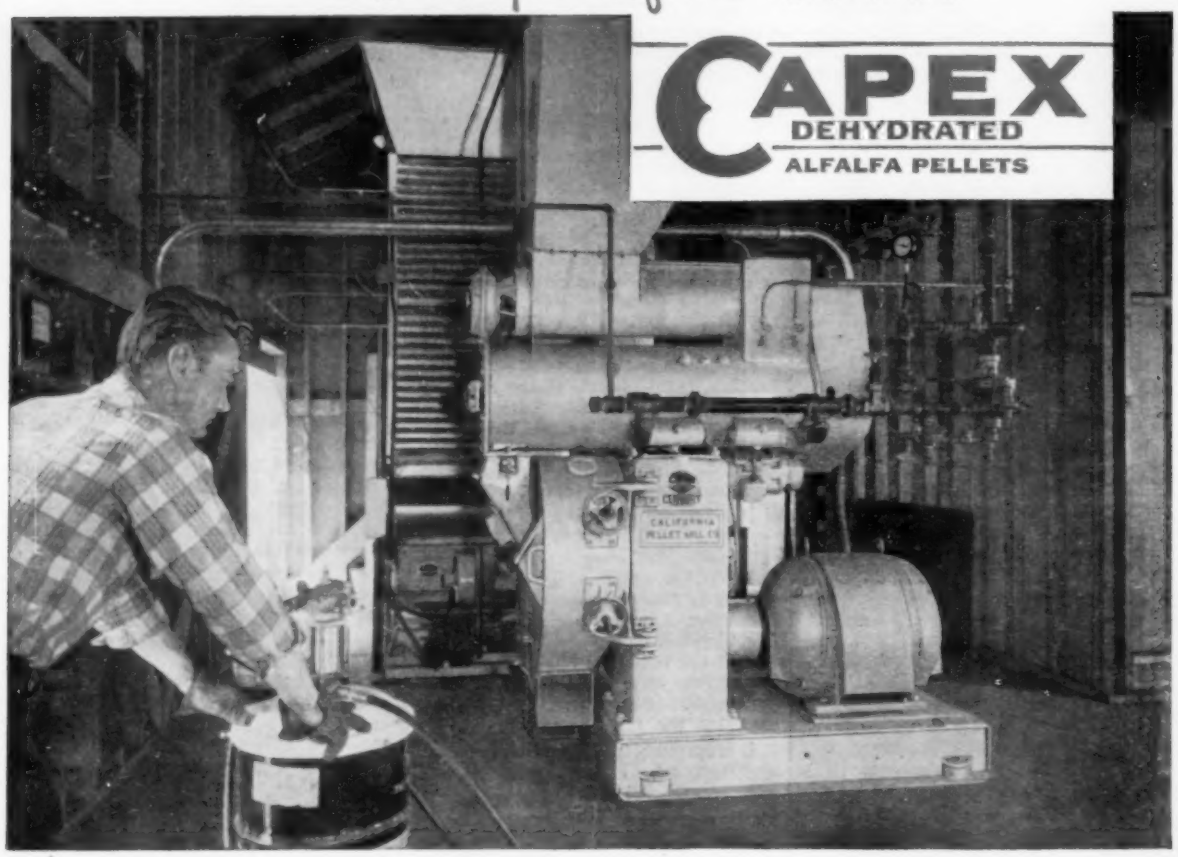


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The A. B. Caple Company, for example, has operated a CPM "Century" 100 in their Toledo, Ohio plant for the past two years. So when they decided early this year to add a pelleting section at their Tontogany, Ohio plant, choice of another CPM "Century" was a natural one.

To take full advantage of the fast-expanding market for pelleted feeds, it will pay you to follow the leaders who make CPM their first choice—and who repeat on CPM when additional units are needed.

Let CPM research, experience, and know-how as pioneers of pelleting equipment, help you select the *one* model that best fits your needs—one that will *continuously produce more pellets per horsepower at lowest cost per ton!* Write for full information or call your nearest CPM representative.

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Now THE PROVEN PRODUCT OF CHOICE FOR PREVENTING COCCIDIOSIS

**This year's unusually rainy and humid weather has resulted in heavy outbreaks of Coccidiosis. During this period Dr. Salsbury's Unistat has been fed out to over 40 million birds. Our extensive investigations show that there have been very few if any outbreaks of Coccidiosis in flocks that have been medicated with Unistat.**

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OTHER plus ADVANTAGES

Unistat also stimulates growth . . . improves feed conversion . . . gives birds better pigmentation.

Only Unistat has stood the test against Coccidiosis so well making it the product of choice for the prevention of Coccidiosis. Write for detailed data on Unistat today.

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## Southeastern Executive Development School Program Announced

DECATUR, GA.—Case studies taken from the files of poultry enterprises will be combined with theoretical instruction at the third and final session of the executive development school sponsored by the Southeastern Poultry & Egg Assn.

Set for Nov. 2-7 at the University of Georgia's continuing education center, the school will provide poultry management students with a well-rounded short study of business problems they are likely to face.

The association announced that a few additional students will be admitted because some persons who planned to attend cannot, according to J. M. Tankersley, Gainesville, executive development school chairman.

Mr. Tankersley said new enrollees will have priority in enrollment in the other two sessions of the course when the 1959 school is held.

Subjects slated for special emphasis in the November session and their instructors were listed as follows:

Current performance appraisal, by George Ryder, employee development manager for Colonial Stores, Atlanta; job description, also by Mr. Ryder; labor relations, by Lewis Porter, personnel and labor relations director for J. D. Jewell, Inc., Gainesville; personal investments, Robert Dince, University of Georgia; What to do when sued, William L. Norton, Jr., tax counsellor and attorney, Gainesville.

Also: Fringe benefits, Clarence Spencer, Manhattan Life Insurance Co., Trenton, N.J.; liability insurance, Roy Turner, insurance executive specializing in poultry, Gainesville; estate planning, William Hartman, specialist in that field, Athens; analyzing financial statements, William A. Carter, Atlanta tax consultant; phone power and its proper use, Merrill Stewart, Southern Bell Telephone Co., Atlanta.

Also: Administrative practices, H. R. Smith, college of business administration, University of Georgia; conducting a controlled business experiment, Dr. J. Clyde Driggers, head of the University of Georgia's poultry department.

The session will include treatment of problems in human relations that beset middle and top management. Theme of the session is "Putting the Man in Management."

Other important management functions to be studied will include delegation of authority; line-staff relationships; company-wide relationships as opposed to departmental thinking, and interviewing as a tool of management.

Persons interested in taking the third session should contact Harold Ford, executive secretary, at Southeastern's Decatur, Ga., headquarters, 235 E. Ponce de Leon Ave.

## USDA Leases Space For Screwworm Check

MEMPHIS, TENN.—The U.S. Department of Agriculture has leased facilities from the South Memphis Stockyards to inspect livestock for infestations of screwworm, serious parasite of cattle, swine, sheep and other animals.

In making the announcement, Hubert Kiersky, general manager of the stockyards, said this is the first station of its kind in the mid-South.

The inspection is to prevent movement of infested animals into the southern states, where a screwworm eradication program is in progress. Animals moving through Memphis and adjacent areas May 1-Oct. 31 will be inspected and treated free.

Dr. J. B. Champlin, USDA veterinarian in charge of the Memphis station, said cooperation of stockmen and shippers in having animals inspected and treated is essential to success of the eradication program in Mississippi, Alabama, Florida, Georgia and South Carolina.

Carl E. McLaughlin

## Union Special Machine Sets Up Dallas Office

CHICAGO—A new sales and service operation has been opened in Dallas by the Union Special Machine Co., Chicago, manufacturer of portable electric bag closing machines. The operation provides for complete parts distribution, machine stock, repair shop and office.

The company also announced new sales territory changes in the Midwest, designed to provide faster delivery of parts and machines direct from the Chicago factory stocks.

The change involves the transfer of Carl E. McLaughlin, and James R. McConnell to St. Louis to handle the Missouri and southern Illinois territories. Mr. McLaughlin formerly covered the territory in northern Mississippi. Mr. McConnell has been a service repairman in the Chicago area, and has gone through the company's sales training program. Leonard Koehler, who has been covering Iowa, will cover that part of Nebraska served by the Chicago district.

The new Dallas office will serve Texas, Arkansas, Oklahoma, Kansas, Wyoming, Colorado and New Mexico. It will also serve Louisiana with the exception of the northeast part of the state; 10 counties in Mississippi adjoining the Louisiana state line; the western part of Tennessee to the Tennessee River, and the western third of Missouri.

Heading the new district office are Zack X. Bennett, manager; Jack H. Muir, assistant manager, and Vernon A. Claus, office manager.


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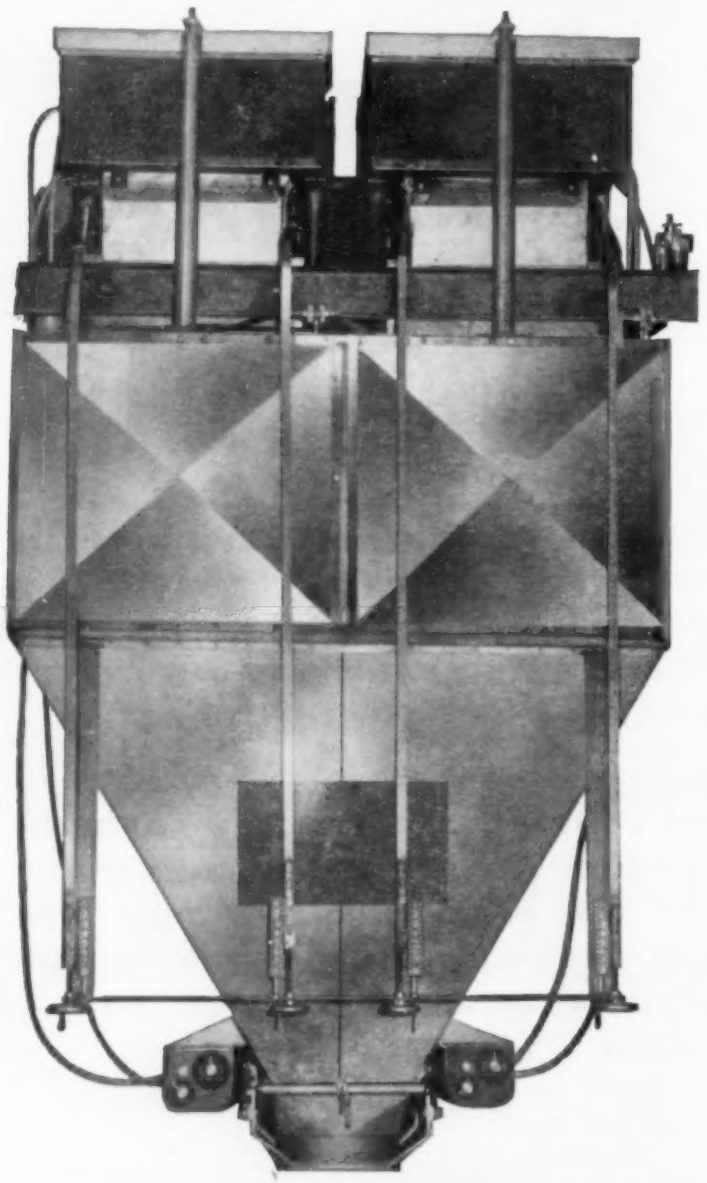
**NEW THAYER SCALE for feed mills provides pin-point accuracy at extreme speeds. Newly designed scales fill one hopper as the other is being discharged into the bag. Unique double bulk and dribble feeders easily maintain 25 to 30 dumps per minute with unvarying accuracy. Accommodates 25 to 100 lb. bags. A control panel gives the operator a continual view of the scale's operation. Scale quickly pays for itself in labor and feed savings.**



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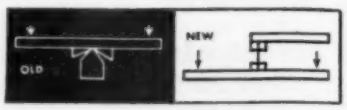


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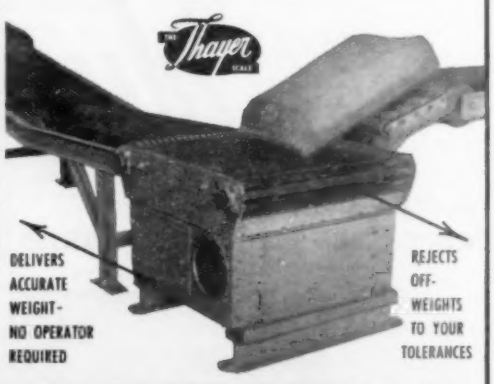
*100% of production*

A Thayer Checkweigher in your conveyor system **rejects off-weight packages to your tolerances.** An invaluable inspection tool that never closes its eyes on filling scales or operators. Thayer Plate Leverage System is **guaranteed accurate** for the life of the scale. Send for full information on Checkweighing to Save Feed and Keep Customers.

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Now you can have a grain aeration system built for your individual storage facility. No longer do grainmen have to rely on pieced together equipment using a hodgepodge of fans, tubing and controls that do only a halfway job. Douglas Engineers working with independent research authorities, have perfected the first pre-engineered aeration system.

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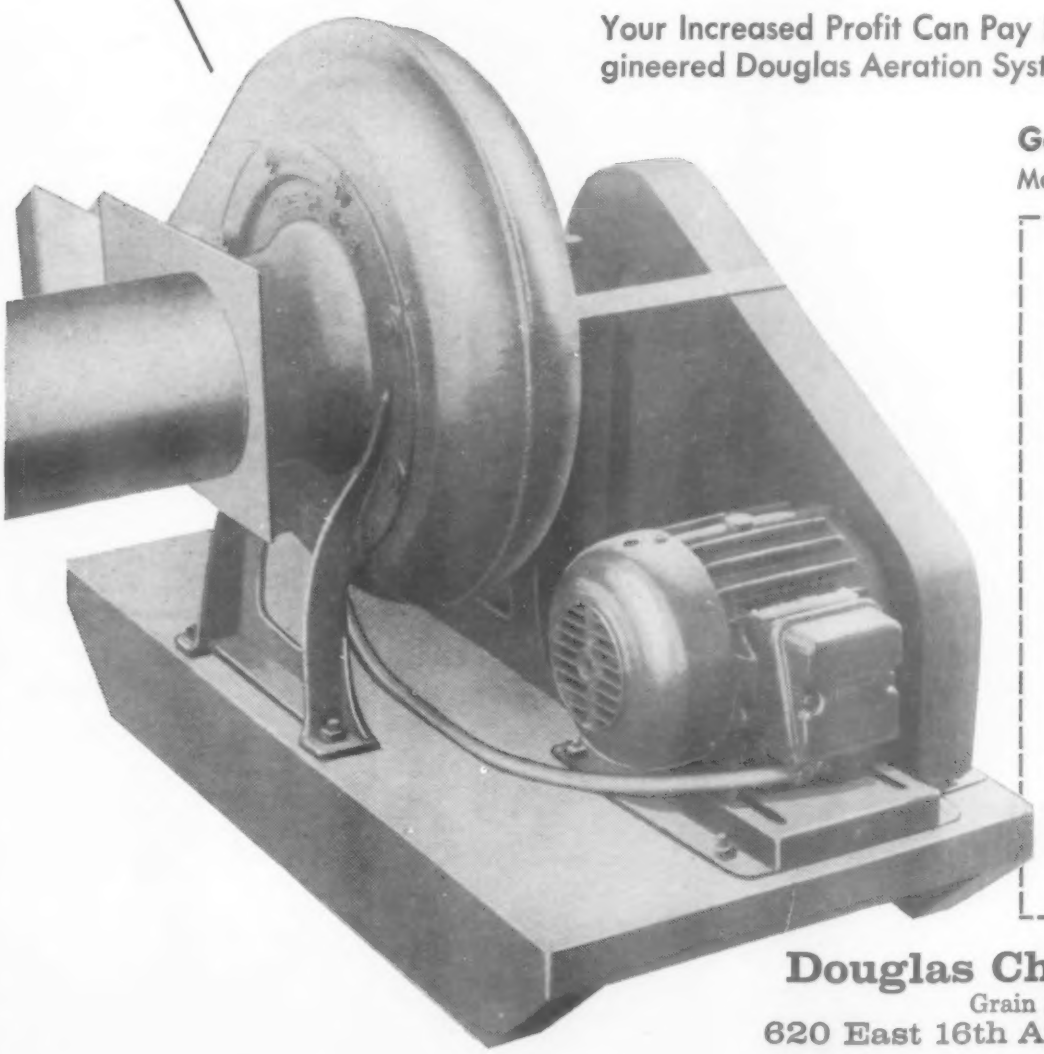

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# Farmers Urged To Give Careful Study to Contracts

URBANA, ILL.—The University of Illinois has issued a news release urging farmers to study any farm integration contract carefully before signing it. The release quotes N. G. P. Krausz, agricultural economist at the university, who reports that farmers who sign such contracts will probably be held to the exact terms of those arrangements.

Mr. Krausz recently completed a study of 20 contracts which covered seed corn production, grain for seed, broiler and pullet production, breeder flock and hatching eggs, poultry feed financing and hog raising.

The agreements represented both large, nationally-known corporations and local feed dealers. He said they are believed to represent the types of integration contracts the average farmer will be offered.

According to the release, "Contract agreements grant the companies a great deal of control over the farmer's activities. Most of them provide for inspection and supervision by the company. But none intend to direct a farmer's daily activities. Instead, they provide a general plan to follow. While some agreements are more detailed than others in explaining the plan and setting forth the farmer's duties, none seems to put him in the position of being merely a hired laborer.

**Payments**

"Payments to farmers are not set up like payments to an employee. Instead, they are based on the amount of production. The contracts therefore place the farmer in the position of an independent contractor or, in a few cases, a debtor to the contracting company.

"Whether a contract remains in force in case of illness or death of the farmer depends on the wording of the contract. Some contracts state definitely that they are binding on the farmer's heirs or successors in case of his death. Where this point is not definitely stated, there is naturally more uncertainty about it.

"Risks taken by the farmer and the contracting company vary with the type of agreement. In seed contracts, the company provides the seed. The farmer furnishes his time, labor, equipment and land. If the crop were destroyed, both would suffer losses. Broiler contracts generally place greater risk of loss on the company than on the farmer.

"In feed financing contracts, the risk of loss is almost entirely on the farmer. Animals that are fed provide security for the farmer's debt. When the animals are sold, the money must be applied to reduce the debt. If the animals should die, the company is protected by other provisions.

**Cancellations**

"Contract cancellation provisions can be a powerful tool in the hands of the company and could be used to work unfairly against the farmer. If the agreement can be canceled easily by the contracting company, the company can limit its liability without giving the farmer the same rights.

"Prices paid in the contracts are generally based on fair market value at the time of the sale. While this arrangement does not give the farmer the guaranteed market he might desire, it does do away with a possible area of controversy.

"Few contract agreements contain any provisions relating to the landlord's rights. Where the agreements carry such provisions, they state that the landlord agrees to the contract as signed by his tenant. Since Illinois law provides that the landlord has a lien for rent on crops, hog and poultry feeding agreements should present no problem.

"The contracts are usually written on forms prepared by the companies. In general the companies have tried to get for themselves the most benefits while incurring the least liability. But this problem is not unique in agricultural contracts."

# Pacific Northwest District Meetings Set

SPOKANE, WASH.—Dates for the 1958 series of district meetings of the Pacific Northwest Grain Dealers Assn., Inc., have been announced by the association secretary.

Nine meetings are planned in Idaho, Montana, Oregon and Washington. Some of the problems to be discussed at the meetings will be grain sanitation, state and national legislation, terminal-county loan rate relationships, storage situations, CSS-CCC programs and problems individual dealers may want to discuss.

The schedule of meetings is as follows: Oct. 21, Boise, Idaho; Oct. 22, Idaho Falls, Idaho; Oct. 23, Great Falls, Mont.; Nov. 5, Lewiston, Idaho; Nov. 6, Pendleton, Ore.; Nov. 7; Ritzville, Wash.; Nov. 12, Colfax, Wash.; Nov. 13, Wilbur, Wash.; Nov. 18, Portland, Ore.

**MILL MANAGER NAMED**

CORRECTIONVILLE, IOWA — Martin Vust has been named operator of the Correctionville Mill & Elevator to be opened here in November. He was formerly with Douglas Chemical Co. The new mill will handle a full line of feeds and will grind and mix feeds.


For Improving . . .
- Production
- Quality
- Sales
- Profits

Why Go Half Way?

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COMPLETE LINE OF THE WORLD'S FINEST LIQUID BLENDING and PELLETING MACHINERY

**Wenger Mixing Equipment is engineered for efficiency, lower over-all costs and quality feed production**

*Years ahead* in the LIQUIDS feed mixing field, Wenger engineered complete package units are built to replace old fashioned, inefficient, piece-meal installations . . . and they are engineered to last. You can lower production costs yet turn out better, more uniform feeds by installing Wenger Packaged Units, Liquid Blenders and Pellet Mills.

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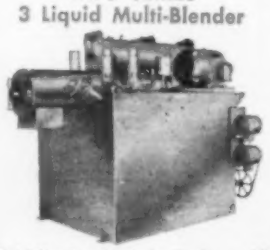

Multi-Blenders built in 3 sizes with 2, 3 or 4 liquid conditioning feeders for simultaneous application of one or several liquid feed ingredients. Wenger Liquidmatic Remote Hydraulic Controls optional to make complete automation practical. For fats, fish solubles, molasses, fermentation solubles, etc.

For every feed miller, regardless of size, there's a Wenger Mixer (capacities of 3 to 60 tons per hour), and Pellet Mill.

Look to Wenger for answers to any problem regarding Liquid Feed ingredients—molasses, fats, fish solubles, moisture, etc.

Shown here are several examples of Wenger's creative engineering to meet the needs of The Modern Feed Miller with practical solutions to his major production problems.

700 Series Molasses Feed Mixer—Capacities 3 to 10 tons per hour—also available with inclined auger feeder.
800 Series Inclined Auger Feeder Model Molasses Feed Mixer—also available with hopper bin feeder.
1200 Series Live Bottom Bin Molasses Mixer for Lightweight Roughage Type Feeds—Capacities to 50 tons.
Largest Capacity High Speed Mixer—Capacities to 60 tons. Similar models in 3 smaller sizes also available. Handle several liquids—molasses, fats, fish, moisture—simultaneously.
Wenger Inclined Belt Conveyor.
Wenger 50 Series Meter Flow Pump—available in molasses, fish, soluble or animal fat models.
Wenger Storage Tank Pumps.
4 Models of Feed Finishers & Dressers—Capacities 3 to 30 tons.
Wenger 100 Series Liquid Feeder for any Liquid Feed Ingredient.
Wenger Packaged Unit Molasses Feed Mixer and High Molasses Pellet Mills available in two models—1000 Series with capacity of 5 tons or Super 75 with capacity of 8 tons per hour of high molasses pellets.
Wenger Pellet Coolers for molasses pellets or hard pellets. Capacities 3 to 40 tons per hour in 14 sizes of single stage or two stage superposed coolers.

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# Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC.

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GUARANTEED ANALYSIS
Crude Protein, not less than.....16%
Crude Fat, not less than.....4%
Crude Fiber, not more than.....9%
INGREDIENTS
Linseed Oil Meal, Soybean Oil Meal, Corn Distillers Dried Grains, Corn Gluten Feed, Wheat Bran, Wheat Standard Middlings, Corn Meal, Hominy Feed, Crimped Oats, Crimped Barley, Feeding Cane Molasses, Vitamin A, Irradiated Yeast, Calcium Carbonate, Dicalcium Phosphate,
2% Trace-Mineral Salt (with Manganese Oxide, Sodium Sulfate, Iron Carbonate, Copper Oxide, Calcium Iodate, Cobalt Carbonate, Zinc Carbonate).
Manufactured by
DOAKES MILLING COMPANY
Farmtown, U. S. A.

## Did you know?

- Dairying produces 19% of the gross national income from agriculture—more gross income than any other productive enterprise.
- Feeding trace-mineral salt improved the fleece weights of ewes eating a high-moisture-content grass silage during tests at the Kentucky Experiment Station. Ewes receiving trace-mineral salt averaged fleece weights of 8.44 and 8.51 lbs., while groups denied trace-mineral salt averaged 7.98 and 8 lbs.

Before you register your '59 feeds...

# Be sure your formula feed tags list trace-mineral salt

**Adequate salt and trace minerals are essential** if you want your '59 formula feeds to be as efficient as possible. So when you register your feeds this fall, don't forget to include 1% Sterling Supermix Blusalt for your regular line dairy feeds, and 2% Sterling Supermix Blusalt for your premium and test cow rations. Include a Sterling Blusalt product in your swine and poultry feeds, too. Make your rations the best in your sales area!

Each special Sterling feed-mixing Blusalt product contains, in addition to high-quality salt, the now known correct amounts of seven essential trace minerals (manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc). You won't have to inventory trace minerals separately. The mixing operation itself will be simplified, too.

**There's a complete line** of Sterling feed-mixing Blusalt products specially formulated for different types of feed. Sterling Supermix Blusalt has the correct trace-mineral balance for livestock feeds. Sterling Gold Bond Blusalt contains *extra manganese* to guard against leg weakness in poultry. Sterling Swine Supermix Blusalt is fortified with *extra zinc* to counteract parakeratosis in swine.

If you'd like specific information on these Sterling Blusalt products . . . or help in preparing your '59 feed formulas . . . contact your nearest International Salt Company sales office.

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**Linear Programming—Part 5**

# The Use of Prepared Tables in Formulating Least-Cost Feed Mixes

**This article further shows how linear programming may be used in solving feed formulation problems. It is hoped that the feed man now sees the logic of the procedure and knows enough of the technique to make a start on applying it to the solution of his problems. The author is convinced that the feed man will profit from its use**

**By Dr. Robert F. Hutton**
**Pennsylvania State University**
Copyright 1958, Robert F. Hutton

*EDITOR'S NOTE: This is the fifth in a series of seven articles on linear programming and its application in the feed industry. In this article, the author outlines a procedure for solving feed mix problems without the use of an electronic computer. At the same time, he points out that it is better to use a computer if such service is available. The author of these articles is an agricultural economist at Pennsylvania State University, University Park, Pa. He has done a good deal of work on linear programming in determining least-cost feed formulations. It is expected that this complete series of articles by Dr. Hutton will be available in booklet form for feed men interested in having all of the information on the use of linear programming. Details on this next week.*

In the previous article in this series we outlined some procedures that may be employed in simplifying linear programming problems for solution upon an electronic computer. In this article we will go a step further and outline a procedure that will free you from dependence upon an electronic computer. The procedure without use of the computer is much less automatic than that with the computer, so it would be perfectly reasonable for you to use the computer even though you could get along without it. I can be stronger than that about the matter; it would probably be poor management to use the procedures we outline in this article if electronic computer services are available to you.

**The Basic Solution:** The beginning point in applying the procedure discussed in this article is a solution to the problem arrived at by unspecified means. (Of course, we would recommend use of an electronic computer in getting this solution, but you could use a desk calculator or other sub-electronic calculators.) This solution will give you two things. It will give you a mix that meets or exceeds specification and it will give you a set of substitution coefficients for ingredients not in the mix in terms of some of those in the mix. We will call the mix the "basic mix" in subsequent discussions.

**Change in Net Cost:** From the substitution coefficients we can compute the net change in cost of the mix that would result from adding any of the ingredients that are not in the basic mix for any given set of prices. If the addition of one of these excluded ingredients would reduce cost under a given set of prices, we would want to add it to the mix. Of course, if none of the excluded ingredients would reduce cost under a given set of prices, this means that the basic mix is the least-cost mix for that set of prices.

These changes in net cost figures are easy to develop on a desk calculator. The operation is one of accumulating a sum of several products. The operation can also be done upon simple computers frequently used in accounting departments to calculate payroll and similar operations. Details of the operations involved are given in a forthcoming Pennsylvania Agriculture Experiment Station Bulletin (1).

**Adjusting the Basic Mix:** After we have computed the change in net cost for all excluded ingredients and have found at least one whose addition to the mix would reduce cost, the next step is that of adding one of the cost reducing ingredients to the mix. In order to add this ingredient we must change the level of other ingredients to make room for it and to assure that the specifications of the mix continue to be met. The substitution coefficients for the ingredient to be added tell us how to adjust the basic mix in order to achieve these objectives. However, we must decide how much of the cost reducing ingredient to add. A simple answer is "as much as possible," but this is not operational. The maximum amount will be set by either: (1) supply of the ingredient, or (2) standard of the mix, or (3) the complete displacement of some ingredient in the basic mix, or (4) the displacement of all of the excess of some characteristic present in excess of minimum standards in the basic mix. To facilitate consideration of all these points and to facilitate adjustment of the basic mix, a set of tables may be prepared, one table for each ingredient, using the substitution coefficients from the basic solution.

**The Displacement Tables:** The substitution coefficients are for some particular level of the ingredient. In our work we have used the ton as the unit, but any other would do as well. The substitution coefficients in our solutions tell us the adjustments to make if we add a ton of the ingredient to which the coefficients apply. We calculate from these values the appropriate adjustment required if we were to add 1 lb. of the ingredient. This is simply a matter of dividing the original coefficients by 2,000. Once we have the coefficients in the 1-lb. unit, we develop a table showing the changes required for each whole pound change in the ingredient. These tables give values from 1 lb. to the limit set by standard of the mix with regard to the amount of the particular ingredient or by the nutritional and other specifications of the mix.

With such a table in front of us it is a simple matter to decide how much of the cost reducing ingredient to add. We first consider the supply limits and the upper limit set by mix standards for his ingredient. (This limit is of the nature of "not over 300 lb. of standard bran" and is not related to the limit that may exist due to the nutritional and other specifications.) Only one of these will be effective. We enter the table above described at the amount of the effective one of these two limits.

We then check to see if the addition of the amount of the cost reducing ingredient that can be added subject only to supply and specific ingredient limits will require the reduction of some ingredient in the basic mix by an amount greater than is available. If not, we proceed with the check outlined in the following paragraph. If so, we move up the column (i.e., reduce the amount of the ingredient being added) until we come to the figure that is most nearly equal to the amount available for displacement in the basic mix. (Since the tables are by pound intervals, exact matching of the amount available for displacement and the amount required to be displaced will rarely occur; but, the error will be of little consequence.)

We need finally to check to make sure that addition of the amount indicated in the above operations will not reduce any characteristic in excess of minimum specification in the basic mix to below minimum specification. (We need not concern ourselves with any characteristic at minimum specified levels in the basic mix since the substitution coefficients will assure that these characteristics remain at the specified minimum level.) If this should be the case, we would reduce the level at which the cost reducing ingredient is added until only the excess of the characteristic is displaced.

I am sure that all of this sounds very confusing, but it is very simple once you get the feel of it. To help you along, let us work through a problem.

**An Illustrative Problem:** Let us suppose we have a solution to a feed mix problem that gave the following substitution coefficients for brewers dried grains (BDG) (all items are in pound units):

| | |
|---|---|
| SOM | −0.4003 |
| Barley | .4208 |
| Hominy | −1.0205 |
| TDN | −.2316 |

To review, this means that if we add one lb. of BDG, remove 0.4003 lb. of SOM, add .4208 lb. of barley, and remove 1.0205 lb. of hominy, we will not have changed the mix in any way with respect to the characteristics specified for the mix (in this case these were fat, protein and TDN) except for the change in TDN. For each pound of BDG added under these conditions, TDN is reduced .2316 lb.

This solution gave us the following basic mix:

| | |
|---|---|
| SOM | 240.9 lb. |
| Barley | 288.6 lb. |
| Hominy | 510.5 lb. |
| Other ingredients of no concern in this illustration | 960.0 lb. |
| Total | 2000.0 lb. |

This mix has 73.7 lb. of TDN in excess of the minimum requirement for the mix.

On a particular date last year the prices, in Buffalo, N.Y., for the ingredients of concern here were as follows:

| | |
|---|---|
| BDG | $0.02055 |
| SOM | .02985 |
| Barley | .02195 |
| Hominy | .02505 |

Would the addition of BDG reduce mix cost? To find out we did the following bit of arithmetic: (1×$.02055) + (−.4003 × $.02985) + (.4208 × $.02195) + (−1.0205 × $.02505) = $−0.007725.

That is, we multiplied the change in amount of each ingredient, as given by the substitution coefficients by the prices for the ingredient. Our answer, $−0.007725, says that the ingredients added would cost less than the ingredients removed from the mix. This being the case, we would like to add BDG to our mix.

How much can we add? To facilitate answering this question we have prepared Table 1. To save space we have omitted most of the entries. In the full table, coefficients would be given for each pound of BDG.

Let us suppose there is a limit on the use of BDG because of supply at the 200-lb.-per-ton level. There is no specific limit on the use of this ingredient in our mix. Can we use 200 lb.? Following the rule above outlined we enter the table at 200 lb. of BDG. We check the entries across this row. The first entry calls for a reduction of 80.06 lb. of SOM. Since we have 240.9 lb. in the basic mix, this will be no problem. Next we consider the coefficient in the barley column. It calls for an increase of 84.16 lb. of barley. This is no problem. Next we check hominy. We need to reduce hominy by 204.1 lb., but we have 510.5 lb. of hominy in our mix and can easily spare the required amount. Finally, we check the change that would result in the level of TDN if we added 200 lb. of BDG. It would be reduced 46.32 lb. Since our basic mix has an excess of 73.7 lb., our mix would still be above the minimum level. Thus, there is no difficulty in our adding the 200 lb. of BDG.

There is one column in the table we did not discuss—that headed "other ingredients." This column was put in the table to accent the point that change is confined to only the item being increased and the items in terms of which the substitution coefficients are expressed.

Now we can use the table very conveniently to figure out what our mix will be after we add 200 lb. BDG. One of my co-workers, Blair Smith, has developed a standarized format for these tables and a device he calls a "windowed change sheet" to facilitate the arithmetic. All the ingredients are listed in the headings of columns across the sheet. The amount of each ingredient in the basic mix is recorded in the first row of this sheet. The next row has a series of windows through which the numbers in the displacement table will show when the sheet is superimposed on the table. The required arithmetic can then be performed and

**TABLE 1**

| Increase of BDG, lb. | Change in SOM, lb. | Barley, lb. | Hominy, lb. | Other Ingredients | TDN, lb. |
|---|---|---|---|---|---|
| 1 | —0.4003 | 0.4208 | —1.0205 | 0.0 | —0.2316 |
| 199 | —79.6597 | 83.7392 | —203.0795 | 0.0 | —46.0884 |
| 200 | —80.0600 | 84.1600 | —204.1000 | 0.0 | —46.3200 |
| 201 | —80.4603 | 84.5808 | —205.1205 | 0.0 | —46.5516 |
| 500 | —200.1500 | 210.4000 | —510.2500 | 0.0 | —115.8000 |

**TABLE 2**

| Ingredient | Basic mix | Change due to adding 200 lb. of BDG (from table) | New mix |
|---|---|---|---|
| BDG | 0 | 200.0 | 200.0 |
| SOM | 240.9 | —80.1 | 160.8 |
| Barley | 288.6 | 84.2 | 372.8 |
| Hominy | 510.5 | —204.1 | 306.4 |
| Other ingredients | 960.0 | 0.0 | 960.0 |
| Total | 2000.0 | 0.0 | 2000.0 |

the answers recorded on a row provided below the windows. Below this row there are other sets of windows to accommodate other changes. This arrangement is also useful in determining the maximum level of entry possible for a cost reducing ingredient.

Since we cannot conveniently reproduce this change sheet, we will perform the operation more laboriously. Table 2 summarizes the operation

The new mix will have 73.7 minus 46.3, or 27.4 lb., of TDN in excess of the minimum requirement.

It is easy to compute the cost of the new mix if we know the cost of the basic mix. Since the addition of a pound of BDG lowered cost by $0.007725, 200 lb. would lower cost about $1.55.

**Another Illustrative Problem:** The previous problem was a bit too pat to illustrate the full usefulness of the displacement tables. Therefore, let us run quickly through another one that is a bit more complicated.

Suppose we have the following basic mix:

| | |
|---|---|
| Barley | 36.3 lb. |
| Hominy | 327.5 lb. |
| Oats | 100.0 lb. |
| Corn | 0.0 lb. |
| All other ingredients | 1,536.2 lb. |
| | 2,000 lb. |

Change in net cost of corn favors its addition to the mix. The following are the relevant substitution coefficients per pound of corn:

| | |
|---|---|
| Barley | —2.88 |
| Hominy | —1.95 |
| Oats | +3.83 |

There are no supply or other specific limits upon the addition of corn to the mix. How much can we add?

Table 3 is the relevant part of the displacement table for corn.

Obviously oats is not going to limit the entry of corn since it is increased as corn is added. Thus, we know that either barley or hominy will limit entry of corn. Just a glance at the level of the two ingredients in the basic mix in relation to their substitution coefficients will make it clear that barley will be the one to give attention to. This decided, we need only to follow down the barley column of the table until we come to the number that is closest in magnitude to the 36.3 lb. of barley available for displacement. This number falls between 12 and 13 lb. of corn—closest to 13. Thus, our answer to the question as to the amount of corn to add is given by the table as 13 lb.

**Reversibility of the Tables:** All our tables have been in terms of increases in ingredients that reduce cost. Sometimes it will pay to reduce an ingredient already in the mix. The same tables can be used by changing the signs of all coefficients.

**TABLE 3**

| Incr. of corn, lb. | Change in Barley, lb. | Change in Hominy, lb. | Change in Oats, lb. |
|---|---|---|---|
| 1 | —2.88 | —1.95 | +3.83 |
| 2 | —5.76 | —3.90 | +7.66 |
| 3 | —8.64 | —5.85 | +11.49 |
| 4 | —11.52 | —7.80 | +15.32 |
| 5 | —14.40 | —9.75 | +19.15 |
| 6 | —17.28 | —11.70 | +22.98 |
| 7 | —20.16 | —13.65 | +26.81 |
| 8 | —23.04 | —15.60 | +30.64 |
| 9 | —25.92 | —17.55 | +34.47 |
| 10 | —28.80 | —19.50 | +38.30 |
| 11 | —31.68 | —21.45 | +42.13 |
| 12 | —34.56 | —23.40 | +45.96 |
| 13 | —37.44 | —25.35 | +49.79 |
| 14 | —40.32 | —27.30 | +53.62 |
| 15 | —43.20 | —29.25 | +57.45 |

**Developing New Displacement Tables:** When the entry of corn in the above illustrative problem was limited by the complete displacement of barley, we are not sure that the least-cost amount of corn has been added without doing some checking. We seek out the least-cost means of increasing barley. Then we see if we can increase barley by this means and simultaneously displace the barley by increasing corn and save money. The search for the least-cost means of increasing barley has been reduced to a routine. Combinations of changes in two ingredients to hold a third constant can be developed and treated as a new set of substitution coefficients. These coefficients may be used to prepare additional displacement tables.

**Changing Mix Characteristics:** Substitution coefficients are provided by the basic solution which permit change in the level of characteristics which are at either a maximum or a minimum level. Permissive changes in these characteristics, as for example, increasing the level of fat above the minimum, should be considered as a possible cost reducing change. These changes are handled in a manner similar to that used in changing ingredients. Displacement tables may be prepared for these characteristics in exactly the same way as they are prepared for the ingredients.

**Automatic Computation:** As pointed out previously, accounting type computers can be programmed to develop the change in net cost figures. We have used the IBM 602A and 604 model calculating punches for this job. Undoubtedly comparable machines of other companies could do the job also.

The IBM 402 accounting machine can be used effectively in preparing the displacement tables. The required format control can be exercised to permit the use of Mr. Smith's "windowed change sheet" on tables prepared in this way.

**Limitations:** If the number of ingredients and specifications is large, the displacement tables become cumbersome. There will be about as many columns in these tables as there are ingredients plus specifications. When the table becomes too wide for convenient handling, there is the possibility of reversing the row and column order.

There exists a great number of possibly relevant displacement tables if we consider combinations of ingredients. Not only is the development of these tables a chore but using them may also be difficult. Visualize the difficulty of using a set of tables as thick as a Sears & Roebuck catalog! This can be overcome by periodically obtaining a new basic solution. But, in that event, it is necessary to develop an entirely new set of tables.

Undoubtedly this method is best adapted to simple mix problems. But, we can say that of all methods. We really need more experience with it to give an adequate appraisal.

**Conclusion:** With this article we have told you all we know about the use of linear programming in solving feed-formulation problems. Of course, there are some details that we could not cover fully, but these are not important. We hope you see the logic of the procedure and enough of the technique to make a start on applying the procedure to the solution of your problems. I am convinced you will profit from its use.

In subsequent articles in this series we will raise our sights a bit to look at mill problems that are broader than mix formulation. In the next article we will deal with plant location problems.

REFERENCES AND NOTES

(1) The draft of the bulletin covering the case of prepared tables is in the review stage at present. It will cover in much greater detail the substance of this article.


This machine is making money for you and your customers

Russ Lindstrom, Albers Nutritionist, with special Homoga-Mixing equipment for Albers Lab-Mix.

**Here's the secret of Homoga-Mixing and Albers Lab-Mix for Poultry, Swine and Ruminants.**

You and your customers form a strong team. You supply the nutritional knowledge and mixing know-how. He supplies good animals or poultry and sound management.

But this is a strong team only when both of you make a reasonable profit. *And the responsibility is yours as a feed mixer to see that you and your feeders make money.*

With Albers Lab-Mix you use 25 lbs. to 50 lbs. in a ton (depending on the type of animal and the formula). This amount of Lab-Mix is large enough to insure complete Homoga-Mixing, but small enough to show your feeders that they buy nothing in Lab-Mix raised on their farms; nothing you can buy locally for less.

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Homoga-Mixing is the exclusive process behind Albers Lab-Mix. Here's a step by step detail to show you why Lab-Mix makes a better ton of feed.

1. INITIAL PREMIXING: First, costly ingredients such as vitamins, antibiotics and minerals are mixed in this Homoga-Mixer. Its rolling and tumbling gyrations combined with an intricate arrangement of baffles, thoroughly disperse microscopic particles in a matter of minutes. This mix is then chemically analyzed by Albers Quality Control Laboratories.

2. SECONDARY PREMIXING: This premix is then added to the finest protein carrying agents, such as fish meal and meat meal. Homoga-Mixing is repeated.

The second stage thoroughly disperses each and every ingredient throughout the mix. Fat globules in the protein carrying agents hold these vital ingredients in complete suspension so that they do not settle into pockets. When Lab-Mix is added to other ingredients that make up your feed it blends completely with every pound, every ounce, for perfect consistency.

That's your insurance that your mixing job will be easier, faster and more effective.

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KANSAS CITY, MO.

# "Unique" Feed Conference Staged at Colorado State

By DR. PAUL A. THORNTON
Colorado State University

FT. COLLINS, COLO.—A "first" in the field of nutrition was initiated recently at the Colorado State University when industry, extension and research people working together staged a feed conference. The theme for this conference was "Feed to Food," and the general emphasis throughout the meeting was placed on getting information to the farmer and consumer.

The meeting was held in conjunction with the annual Colorado Extension Conference in cooperation with the Colorado Grain Milling & Feeders Assn. and the Midwest Feed Manufacturers Assn. The audience was composed of county agents, home demonstration personnel, feed manufacturers, feed dealers and research people.

In the opening address, Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., expressed a desire that the feed men and extension people work together in recommendations on feeding problems of the farmer and rancher. In an analysis of current business trends, Mr. Larson brought out that farming and ranching are rapidly changing into agri-business, which intensified the need for a better understanding between all people concerned with the feed and food industry.

Three panels were selected to cover the subject "Feed to Food." The first panel was composed of Dr. Edna Page, Colorado State University human nutritionist; Dr. M. L. Scott, Cornell poultry nutritionist, and Dr. James Corbin, products research manager, Ralston Purina Co. They talked on "Nutritional Fundamentals Up to Date." This panel was moderated by Dr. S. S. Wheeler, dean and director of the Agricultural Experiment Station, Colorado State University.

### Fundamental Nutrition

The first speaker on the subject of fundamental nutrition, Dr. Page, reviewed the current recommended food allowances for the human at the different stages of life.

Dr. Scott reviewed the contributions of nutritional science to the field of medicine, and the part played by the animal nutritionists in this endeavor. Further comments by Dr. Scott covered the progress made by the animal nutritionist and geneticist in the improvement of the animal to convert feed to food. It was pointed out that such progress has made this country one of the best fed nations in the world.

In discussion of some research conducted at Cornell, Dr. Scott pointed out that animal foods such as turkey meat were very high in essential amino acids, as well as many vitamins and minerals, while being relatively low in energy.

### Quality Feeds

Dr. Corbin spoke of the need of the feed manufacturer to produce a feed in which the customer could have complete confidence. Illustrations of the great number of precautions taken by the feed manufacturer to insure such results were given by the speaker.

It was shown, for example, that considerable research was carried out on a given feeding program before its release to the public. The use of chemical analysis in quality control and the many different methods in achieving this control were discussed.

These steps, as pointed out by Dr. Corbin, are necessary in order to produce a top-quality product so that the feeder in turn can supply the greatest amount of high-quality food for our people at the least cost.

The second panel of the conference discussed, "Feed and Food, Facts and Fancies." Speakers on this panel included Prof. Virginia Beal, nutritionist, Child Research Council, Colorado medical school; Dr. W. W. Brown, extension veterinarian, Colorado State University, and Dr. Robert Spitzer, Murphy Products Co., Burlington, Wis. Ray Ammon, the Quaker Oats Co., St. Joseph, Mo., president of the Midwest Feed Manufacturers Assn., acted as panel moderator.

In Prof. Beal's talk, the place of animals in nutritional research was discussed. In speaking of current and past research concerned with dietary fat intake, and the incidence of cardiac disorders, Prof. Beal suggested that one should not be too hasty in accepting any of the current theories since there appear to be many factors involved. She said evidence can be found to support any one of several possibilities, but none that could be considered conclusive.

### Caution With Drugs

Dr. Brown said too much emphasis was being placed on the use of some new drugs as a replacement for good nutrition, management and sanitation.

He stressed that many drugs such as antibiotics are of value for specific conditions, and that such drugs may be useful for increasing growth and feed efficiency, but that indiscriminate use should be curtailed.

As an example of this, Dr. Brown

(Turn to page 42)


Increase the Dollar Capacity of Your Elevator

with Broader Service, Higher Efficiency, Faster Grain Handling!

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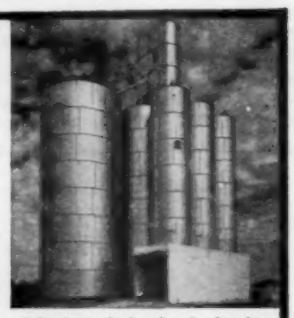
Many country elevator operators have discovered how to increase the *dollar* capacity of their elevators without building excessive storage capacity. The answer is Columbian "Look Ahead" modernization which provides the services today's customers want, faster handling of their grain and cost-cutting efficiency.

Tailored to your own requirements and the grains available in your area, Columbian engineers can design and provide efficient bolted steel blending and classifying tanks, headhouses, storage tanks and handling equipment integrated into your present operations or as a new installation.

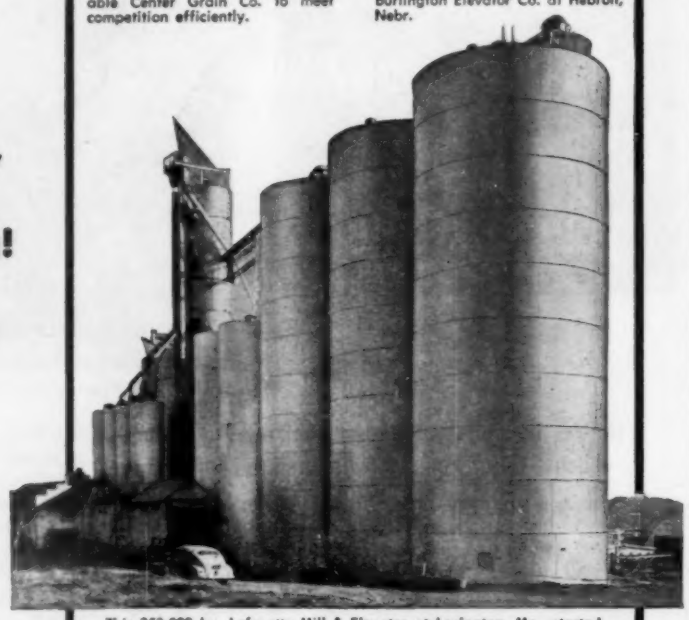
Columbian Bolted Steel tanks are tight, fireproof and vermin proof, impervious to wind and weather. They are erected fast and economically—and matching capacity for future growth can easily be added at any time.

Columbian engineers will be glad to consult with you on your own elevator problem—and give a "Look Ahead" plan for increasing the dollar capacity of your elevator operations. Write today for a free copy of the Columbian Grain Tank catalog.

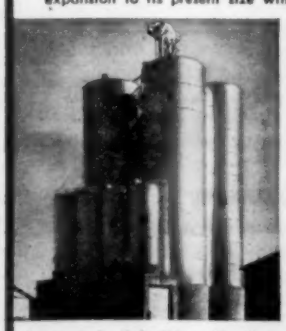
Modern Columbian blending and classifying tanks and a part-new, part-old elevator at Oberlin, Kans., enable Center Grain Co. to meet competition efficiently.



Columbian look ahead planning and bolted steel tanks provided this completely modern 115,000 bu. "all gravity" elevator for Burlington Elevator Co. at Hebron, Nebr.



This 250,000 bu. Lafayette Mill & Elevator at Lexington, Mo., started as a modern 75,000 bu. plant designed with Columbian "look-ahead" engineering in 1946. The extra "dollar capacity" of that efficient original installation created enough business to require and permit expansion to its present size within ten years.



Economical Columbian Blending and classifying tanks over a drive-through means fast, efficient grain handling for McKenna Grain Co., Kingman, Kans. Note elimination of headhouse, for economy. Capacity is 90,000 bu., handled at rate of 5,000 bu. an hour.

Columbian Modernization provided so much extra "dollar capacity" for Riverdale Grain Company's 64,000 bushel elevator that a 67% expansion of bushel capacity became necessary within one year. New Bolted Steel tanks for 43,000 bu. were added.

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**S.Q.®**—the most effective drug for the prevention or control of coccidiosis in turkeys. Also for controlling outbreaks in unprotected flocks—where feed intake has been lowered due to disease or stress conditions—or where breakthroughs occur from uncommon species of coccidia.

**NICARB®**—for maximum protection...tried, tested and proved in over 3 billion birds. Now widely used with broilers and with replacement pullets, where there is no problem of accidental feeding to birds in production.

**GLYCAMIDE®**—best tolerated and highly efficient in permitting top weight gains and feed efficiency in broilers and replacements.

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The miracle of modern drugs has resulted in disease control never before believed possible. But to some degree, it has also brought about an equalization process ...the emergence of organisms which escape the action of even the most potent drugs. Certain strains of coccidia now appear to fall into this category.

...So, if symptoms of coccidiosis appear in your flocks, consult a poultry pathologist at once to arrive at a sound diagnosis—to determine whether the symptoms are, indeed, due to unusually virulent strains of coccidia or to some other primary or masking infection.

...Keep in mind that maximum profits depend not only on an effective coccidiostat. Management practices for the production of healthy broilers or replacement chicks are essential to any operation.

Good stock, good feed as well as good management are needed by your flock to obtain the peak of its genetic potential.

*Protect flock health...increase poultry profits*

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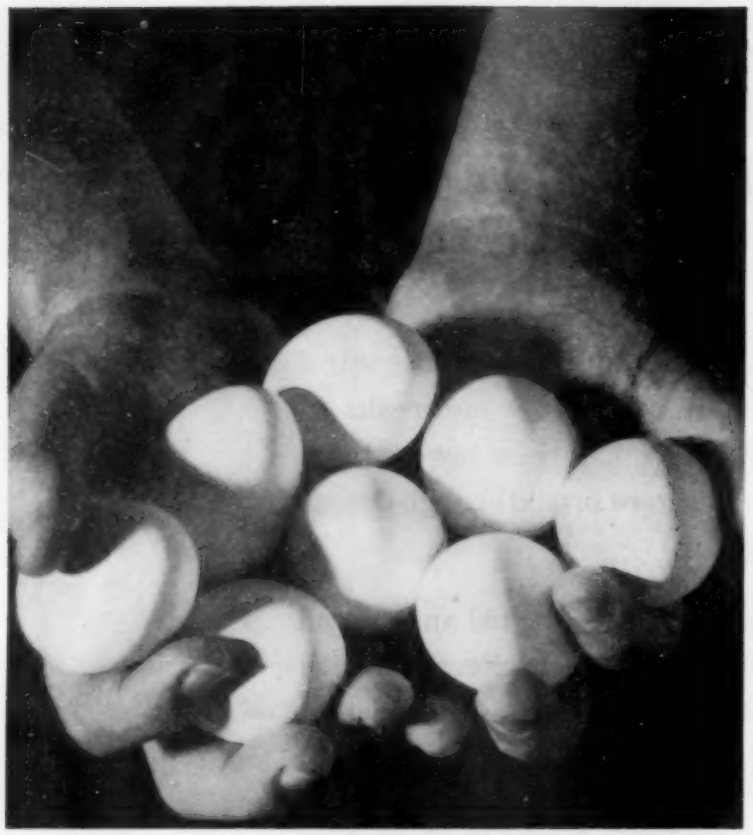
# 2 POULTRY PROFIT AIDS
# STONEMO Granite Grit



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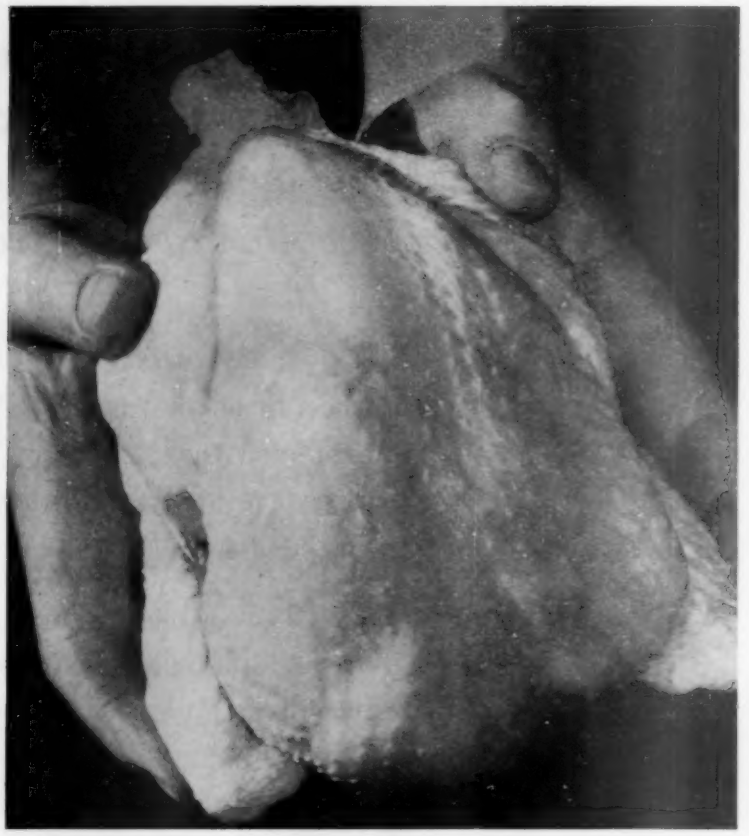
### and More Eggs from Your Feed

For extra eggs, your customers' birds need gizzard teeth that are hard, sharp-cutting, quick-grinding, and the proper size. Stonemo hard granite grit is scientifically processed to give your birds *extra grinding surfaces.*

With each contraction of the gizzard, Stonemo Granite Grit rips open the tough hard film which encases the various nutrients of the finest mash. Stonemo also grinds fine the coarse scratch grains, making them more digestible, better used to produce more eggs.

In the latest work of Iowa State College, up to 10% more eggs were produced from the same feed when Stonemo was offered free choice, and with better feed conversion.

So, sell the importance of gizzard grinding with every lot of feed. Sell the right size Stonemo and watch your customers' poultry profits grow.



## SELL GIZZARD GRINDING
### and Extra Meat from Your Feed

If you have broiler customers who are having a hard time making a profit, here is a tip you and they will appreciate. In a series of feeding tests at our research farm, even when an all-mash diet was used, broilers were heavier, feed conversion was better, profits increased nearly ½ cent per pound against no grit—$16.85 per thousand birds.

*Sell Gizzard Grinding, and your customers will find:*

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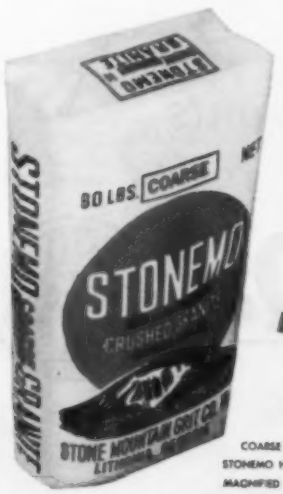
- **Less feed will be used to produce a pound of meat, even on an all-mash feeding program.**
- **Birds get to market quicker—your customers start the next lot of broilers earlier—save time and money.**



COARSE SIZE STONEMO HARD GRIT MAGNIFIED 6 TIMES

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Whenever you sell feed for pullets or broilers, sell Stonemo with it, and make feed do a better job. Point out how changing to larger size Stonemo—Medium beginning the fourth week, Coarse beginning the seventh week—will increase feed efficiency and step up profits.

For further research facts about Stonemo, proper feeding directions, and sales aids including posters, newspaper mats, radio scripts, and the popular hit record "Sing Chicken Sing," write:

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**Lithonia, Georgia**

## The Grit with the "EXTRA GRINDING SURFACES"

# FROM ONE DEPENDABLE SOURCE

# Sta-Kleen Nesting Material

## SELL Sta-Kleen

Sta-Kleen Nesting Material is a natural to sell. Clean nests are so badly needed by poultrymen that Sta-Kleen almost sells itself.

Think of being able to tell your customers they can reduce the number of dirty eggs up to 80%.

Think of the sales appeal to a farmer's wife when you say that Sta-Kleen saves the chore of washing or cleaning eggs.

Think of selling the extra profit angle of marketing top-quality eggs—eggs with the bloom still on the shells.

But that's not all. You can also sell less egg breakage, less cracked shells, less unmarketable eggs, for Sta-Kleen is soft, resilient, and cushions the eggs.

Just as important as the right egg-laying environment is Sta-Kleen's remarkable ability to repel dirt and absorb moisture. Droppings are quickly dehydrated and easily removed from the nests.

## What are Sta-Kleen's Advantages to You as a Dealer?

There are four big reasons for you to stock and sell Sta-Kleen. All four can increase your profits.

1. **Sta-Kleen sales give you a good margin of profit.**
2. **Sta-Kleen is a repeat item that constantly builds your business.**
3. **Sta-Kleen is nationally advertised to help you build volume fast.**
4. **Sta-Kleen is display packaged in 50 lb. multiwall bags. It's easy to buy right along with your Stonemo Granite Grit.**

So, order Sta-Kleen today from your supplier of Stonemo Granite Grit. Write direct for folders, posters, newspaper mats.

**STONE MOUNTAIN GRIT COMPANY, INC.**
**Lithonia, Georgia**

**Sta-Kleen ...another fine product to increase poultry profits**

discussed the use of antibiotics in mastitis control, and warned that in many cases, because of improper dosage, resistant strains of bacteria are developed. In the talk it was brought out that some people are allergic to certain antibiotics, while others develop such allergies by drinking milk containing these compounds.

In his concluding remarks, Dr. Brown discussed the large number of new drugs developed annually, and the important part these materials will play in our future feeding program.

Dr. Spitzer reviewed the need for efficient operation by those people concerned with food and feed production. This need for efficiency will be intensified by time, since the population of this country is increasing at a very rapid rate, while the farm population is steadily decreasing, he said, adding that it behooves the nutritionist to provide more efficient rations so that farm animals will be more efficient converters of feed to food for our increasing population. Dr. Spitzer stressed strongly the needs for understanding and cooperation between all segments of the feed and food industry.

On the final panel, entitled "Our Responsibility to the Public," Guy Stewart, Colorado Extension Service, acted as moderator. Speakers on this panel included Dr. Evelyn Spindler, federal extension nutritionist, Washington, D.C.; Dr. Gerald Ward, Colorado State University, dairy nutritionist; Loren Burns, Mel Miller & Co., Kansas City, and Ted Hartung, Colorado State University extension poultry specialist.

In her opening remarks Dr. Spindler brought out the need for coordination of efforts of industry, research and extension to tell the same story. The need for reaching all of the public rather than the ordinary few was stressed. It was suggested that people engaged in providing such information should not only inform the public, but should also motivate such persons to act.

Dr. Spindler also discussed the controversial question of fat and cardiovascular diseases. In this discussion she brought out that much evidence has shown that fat was related to these diseases, and suggested that possible future findings may dictate a change in our present feeding programs of livestock.

Dr. Ward mentioned that the researcher has the responsibility of keeping extension people, feed men and veterinarians informed of new results, and that in turn these people need to keep up with new findings as they appear in the literature.

In this talk, the "sensational story" was mentioned. Dr. Ward remarked that in many cases such stories, although original sounding, may be based on old nutritional principles. He remarked that confusion among people in the field resulting from such stories may be cleared up readily by good communication between field workers and specialist.

Mr. Burns discussed farm-to-market coordination. In this discussion he stated that whether we are a farmer, processor or marketing agency, we have one basic responsibility to the public—to get the best possible product to the consumer at the least possible cost.

Mr. Burns also remarked that the farmer and processor must recognize that the consumer dictates the type and amount of product he buys, and that production must be modified to consumer desires. It was suggested that the producer and processor can best serve the consumer by performing the function in which they are specialists. However, it was stated, that such specialists must be coordinated to provide the consumer the product he wants at the lowest possible costs.

In the final talk of this conference, Mr. Hartung discussed the need of uniformity to any person forming the links of the chain in the food and feed industry. Concerning uniformity, it was suggested that the poultry industry was in a good position to settle down to some basic uniform feeding recommendations. It was pointed out that we cannot totally agree on completely uniform feeding recommendations, but that the over-all feeding program could become more uniform.

In achieving such a goal Mr. Hartung suggested that feed men, extension workers and research personnel should work more closely. In bringing about such cooperation, it was suggested that state universities initiate short conferences each year on various problems in the field and that these different groups participate. Use of such a procedure, he said, would greatly increase the uniformity of the nutrition story which is told to the public.

### REMODELS FEED DEPARTMENT

EMERY, S.D.—The feed department of the Shanard Elevator Co., Emery, is being enlarged and remodeled. Four eight-ton tanks to handle bulk feeds and concentrates have been added and the old siding on the building will be replaced with galvanized steel sheets.


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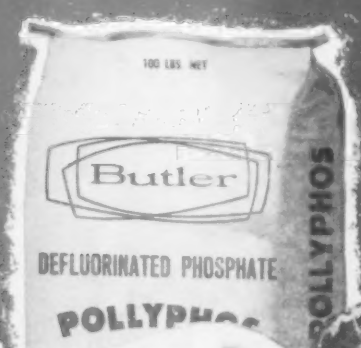


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## Speakers Named For IFA-IPIA Annual Convention

SPRINGFIELD, ILL.—Experts in livestock production, poultry marketing and public relations will be headline speakers for the joint Illinois Feed Assn.-Illinois Poultry Improvement Assn. convention to be held at the Springfield Armory here Nov. 5-6.

The livestock expert is Jerry Sotola, associate director of the livestock bureau of Armour & Co., Chicago. Mr. Sotola has been a professor of animal husbandry, secretary of a cattlemen's association and director of research for a feed firm. He is familiar with producers' problems on a nationwide basis.

O. Harvey Green, executive director of the American Poultry & Hatchery Federation, is also scheduled for the program. He will appear at the annual "Good Egg" breakfast Nov. 6 to discuss the subject, "Is Your Frying Pan Too Small?" He has been in the poultry business since 1925 and is a graduate of Clemson College. After graduation he spent 12 years in the commercial poultry field service working throughout nine southern states before he returned to South Carolina to assume management of the Seven Oaks breeding farm and hatchery.

Speaking on public relations at the convention will be Byron Lopp, human relations specialist and sales counselor and presently head of the public relations staff of the Central Bank & Trust Co., Denver. He will conduct a four-session sales training clinic at the convention. The "Human Side of Business and Public Relations" will be the theme of this clinic.

More than 1,000 dealers are expected to attend the convention.

## Grain, Concentrates Fed Milk Cows at Record Level Oct. 1

WASHINGTON — Grain and concentrates fed to milk cows reached a record high of 5.5 lb. per cow Oct. 1, the U.S. Department of Agriculture reports, but the rate showed less than the usual increase from Aug. 1 to Oct. 1.

The total, however, was 4% above the previous record for the date set a year ago, and it was more than 25% above the 1947-56 average for the date.

Feeding rates were at new highs in all regions of the country but the south Atlantic and south central regions where the amount of grain fed was 2% less than the record.

Rates Oct. 1 ranged from 6.9 lb. in the north Atlantic states to 4.6 lb. in the south central. Quantities fed per cow in other regions were 5.9 lb. in the east north central; 5.7 lb. in the West; 5.2 lb. in the south Atlantic, and 5 lb. in the west north central.

Crop reporters over the nation indicated they fed their milk cows 6% more grain on Oct. 1 than on Aug. 1. This compared with the usual seasonal increase of 8% between those dates. Farmers in the Atlantic Coast regions were the only group whose average rate of feeding increased more than normally from Aug. 1 to Oct. 1.

The value of grain and concentrates fed to milk cows averaged $2.91 cwt. Sept. 15. This was down 3% from a year earlier and the lowest value for the date since 1945.

**BUILDS STORAGE BUILDING**

DES MOINES — The Des Moines County Farm Service Co. has erected a 256,000-bu. grain storage building at Mediapolis.


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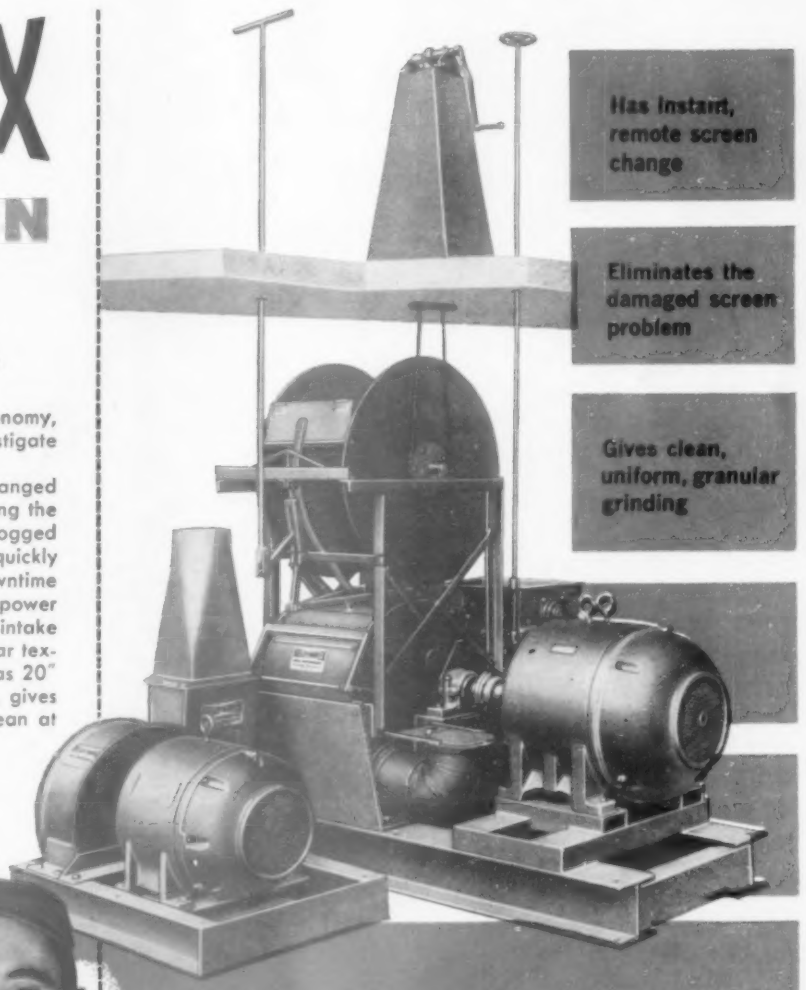
Make your own "point-for-point" comparison. Mail card today for literature and full details. See for yourself how much more you get with a Kelly Duplex Remote Screen Change Hammermill . . . and how much more it will do for you.



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"In our elevator at New Hope, Ohio, we have a Kelly Duplex Remote Screen Change Hammermill powered by a 75 HP motor on the mill and a 30 HP motor on the blower. It saves us time and steps in servicing customers . . . and gives us a product that looks like it had gone through a grader to get a more even grind. I would recommend this mill to anyone."

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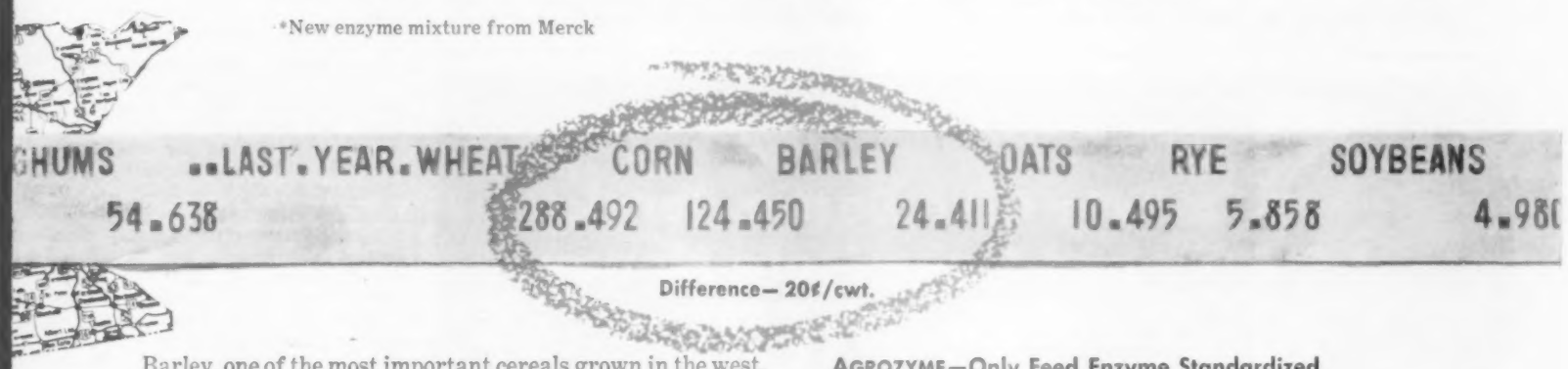


Barley, one of the most important cereals grown in the west, should be fed as the principal grain if the price is right and, if AGROZYME is added to overcome problems of growth depression, lowered feed efficiency (in comparison to yellow corn diets) and sticky droppings.

### Enzyme Treatment of Barley Feeds... A Practical, Profitable Milling Procedure

The work of Dr. James McGinnis and his associates at the State College of Washington—since confirmed by researchers in the Universities of Oregon and Utah and in the Merck Laboratories—has demonstrated the remarkable effects of enzymes in overcoming the objectionable features of feeds containing barley as the principal grain.

Tests under field conditions have showed that the addition of one pound of AGROZYME to one ton of feed containing as much as 1,000 pounds of barley yields results in growth and feed efficiency that closely approximate those obtained with corn. Birds fed enzyme-treated barley grow essentially as well as corn-fed birds with a considerable reduction in feed cost.

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# Report on Beef Feeding Trials Given at Minnesota

ROSEMOUNT, MINN. — Pasture fertilizer, feed additives and all-around careful feeding can make some big increases in profits for beef farmers, visitors to the recent Minnesota Beef-Grassland Day were told.

The event was held at the University of Minnesota's Agricultural Experiment station here.

Paul Burson, soils researcher at the university, said that in one set of trials this year, steers on fertilized pastures averaged $114.08 worth of "beef per acre," compared to $84.56 worth on unfertilized grazing. The steers weighed about 588 lb. each at the start of the trial, which ran from late May to Sept. 12.

These values, Mr. Burson said, were calculated after subtracting $15 per acre for fertilizer costs on the fertilized pasture. Steers on fertilized grazing gained faster, too—2.15 lb. per day, compared to 1.97 for the others.

The researchers also conducted an experiment to obtain more information on the desirability of implanting steers with stilbestrol that were grazed on fertilized and unfertilized pastures with and without supplemental grain.

Dr. A. L. Harvey, livestock scientist at the University of Minnesota, said that after both feed and fertilizer costs were subtracted, the best returns still came from steers implanted with stilbestrol, receiving grain and on fertilized pasture. These animals produced about $137 in beef from each acre of pasture, compared to $85 for those on fertilized pasture without grain or stilbestrol. Steers getting no grain or stilbestrol and on unfertilized pasture averaged only $72 worth of beef per acre.

Grain fed in these tests was 5.3 lb. of ground ear corn per head daily. The stilbestrol was administered in a 24-mg. implant at the start of the trial.

### Silage Feeding

Dr. O. E. Kolari, another livestock researcher, said yearling steers gained more slowly and had lower carcass grades when "full-fed" silage than they did when fed little or no silage. Steers fed no silage gained 2.57 lb. per day. Gains from other levels of silage feeding were: "⅓ of full-fed," 2.53 lb. per day; "⅔ of full-fed," 2.42 lb., and "full-fed," 2.29 lb. daily. The steers fed no silage or ⅓ of full feed had the highest margin of return over feed cost.

Dr. W. J. Aunan, University meats researcher, said trials showed that steers either fed or implanted with stilbestrol can grade as high as cattle not receiving the material, if the steers getting stilbestrol are fed as long as the others.

Dr. Aunan added, however, that carcasses from stilbestrol-fed or implanted steers won't grade as high as animals not getting stilbestrol, if both are marketed at the same live weight.

Three other trials involving the use of stilbestrol were also reported. Two of them were a study of the value of adding oxytetracycline (Terramycin) to stilbestrol in a ration. One trial involved feeding steers and the other involved heifers.

Data on the steer trial showed little difference in the average daily gains of cattle fed stilbestrol alone or in combination with the antibiotic (2.44 and 2.56 lb., respectively). However, the market value of the steers fed the antibiotic with stilbestrol averaged 40¢ cwt. more than steers fed stilbestrol only.

In the heifer trial, the average daily gains of heifers fed stilbestrol alone and those fed stilbestrol in combination with oxytetracycline were identical—2.16 lb. Feed costs for the two groups were also almost identical.

### Value of Stilbestrol

J. C. Meiske, livestock researcher, reported on another stilbestrol trial which compared the performance of steers not receiving stilbestrol with steers either fed 10 mg. stilbestrol per head daily or implanted with 24 mg. stilbestrol.

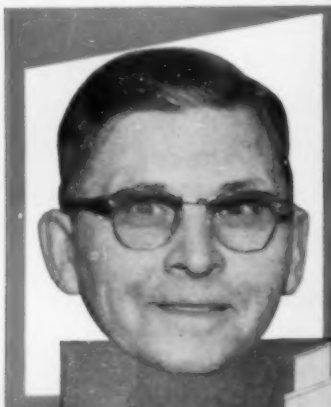
Results showed that the stilbestrol-fed lots gained 11.3% faster than control steers and had a greater efficiency of feed utilization (810 lb. feed per cwt. gain to 878 lb. feed per cwt. gain). Steers implanted with stilbestrol gained at a rate of 2.59 lb. daily compared to 2.39 lb. for the controls, and they had feed efficiency of 824 lb. feed per cwt. gain to 878 lb.

# Buys Mill Equipment

JEFFERSON CITY, MO.—Ray L. Jones, Jefferson City, announced that he has purchased all of the feed mill machinery and equipment out of the Benton, Ill., plant of the Illinois Farm Supply Co. He said the mill was producing in the vicinity of 250,000 tons annually before being shut down several months ago. Machinery is now being dismantled and shipped out.

### ADDS TO ELEVATOR

VICTORIA, KANSAS — Construction work is under way on a 350,000 bu. addition to the Victoria Cooperative Elevator Co. here. The firm will expand its storage space total to 683,000 bu., including 543,000 bu. here and 140,000 at Walker, Kansas.

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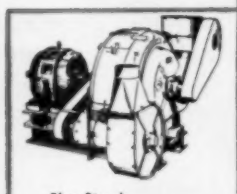
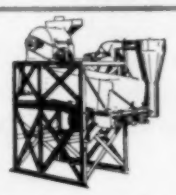

Blue Streak Advance Custom Mill

Blue Streak Dual-Power A.C. Mill with Pratermatic Screen Changer


Blue Streak Corn Cutter

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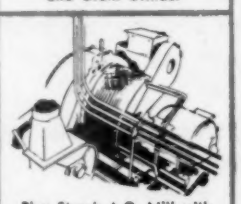
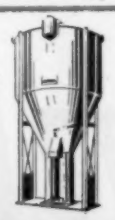
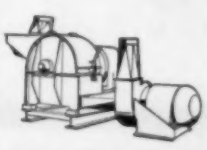
Blue Streak Double Chain Drag Feeder

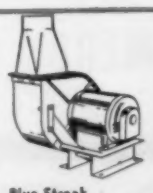

Blue Streak A.C. Mill with Pratermatic Screen Changer

Blue Streak Vertical and Horizontal Screw Conveyors


Blue Streak Twin Spiral Mixer

Prater Automatic Package Plant


Prater Fibre Grinder for Commercial Mills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Vol. V ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ No. 10

## New Work Stresses Lack of Methionine in Casein

Recent assay tests with casein show a highly variable content of methionine in this milk protein. Addition of DL-methionine to casein used in the nutrient media permitted normal growth of the test organisms in microbiological assays. These results show that even a quality protein can vary considerably in this essential sulfur amino acid. Other protein sources used in feeds have similar wide variations in methionine content. U.S.I. feed-grade DL-methionine supplement should be added.

## New Illinois Plant to make MOREA® Pre-Mix

Increased demand for MOREA Liquid Feed in the Midwest has brought approval of plans for a new MOREA pre-mix plant at Tuscola, Illinois. The new liquid feed facilities will be part of the multi-million dollar chemical plant of U.S.I. Ethanol, the vital "hydrogen donor" ingredient of this patented feed for ruminants, is produced at Tuscola. Other ingredients of the pre-mix are urea, phosphoric acid and trace minerals. Local mixer-distributors buy the pre-mix and blend it with molasses to make MOREA liquid feed. This modern feed saves labor and produces well-marbled meat with less waste cover fat. Mixer-distributors are now being appointed. For information, write U.S.I.

## Worthwhile Reading

A method for deriving a least-cost broiler feed formula is described in Production Research Report No. 20 of The Agricultural Research Service. This valuable 40-page report is available at 25¢ from The Superintendent of Documents, Government Printing Office, Washington 25, D.C.

# New Secrets of Vitamin E Functions in Feeds Gradually Being Discovered

### This Fat-Soluble Nutrient Has Many Vital Uses

Many different livestock maladies are caused by lack of enough vitamin E in feeds. But just how this chemically complex vitamin works is still a matter of much speculation. Its use in feeds provides definite prevention of enlarged hock disease in turkeys, crazy chick disease in poultry, white muscle disease in calves, stiff lamb disease, yellow fat disease in mink kits and a similar hemorrhagic disorder in poultry.

Vitamin E supplement for minks is usually essential to produce healthy growth.
Photo Courtesy Rockledge Farms

### Improves Hatchability

Many other effects—such as improving turkey egg hatchability, decreasing oxidized flavors in milk and milk products, and prevention of muscular degeneration in many kinds of animals—are also considered in adding vitamin E to feeds.

Recent research shows some puzzling inter-relationships of vitamin E with other feed ingredients and chemicals. Selenium, for example, an element that is poisonous except in minute quantities, has shown a vitamin E sparing action in certain feeding trials. Methionine, niacin and phosphorus have also been shown to be essential for best results in feeding vitamin E to livestock for control of certain disorders.

### Stable Source of E

Animals on good, green pasture seldom lack vitamin E. But the potency of vitamin E in many other natural sources of this nutrient is highly variable, particularly after storage or artificial heat drying. Some forms of vitamin E, of which there are many, act as an anti-oxidant in feeds. If used up in this function, they cannot provide full vitamin E values.

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## Poultry Breeds Vary in Needs for Methionine

A series of recent experiments showed that one poultry breed produced five times greater growth response than another to addition of methionine in a standard ration. Crossbred birds also showed variations in response to a standard amount of methionine feed supplement. This indicates that adequate DL-methionine should be used in rations to meet the variable needs of different breeds of poultry.

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# Meal Versus Pelleted Feed With Varying Oat Levels for Swine

By J. A. Hoefer, E. C. Miller, Jr.,
R. W. Luecke and R. W. Seerley
Michigan State University

The best method of feeding swine still remains questionable. In general, data indicate that growing pigs will gain slightly faster on a complete mixed ration, while cheaper gains can be obtained by free choice feeding.

Gains made on mixed rations are frequently more costly due to mixing and grinding costs. Although this is the general trend, the results have been quite varied. Therefore, in any swine feeding program, the best method of feeding will depend on the particular setup.

Within the last few years, pelleted feed has increased greatly in popularity. Practically all species of livestock have shown faster and more efficient gains when fed rations in the form of a pellet.

The reason pelleting increases gains and improves efficiency is not well understood. Most often the improvement is attributed to a denser feed, increased palatability, increased consumption, less dustiness and less feed wastage.

It is also possible that the physical structure of the feed may be altered by the heat and pressure of the pelleting process, thereby permitting greater nutrient utilization by the animal. Probably all these points have a role in the effectiveness of pelleting, but more studies will be required to bring out all the facts.

To study the importance of pelleted swine rations, two experiments were set up comparing the same ration in meal and pellet form (Experiment I), and comparing meal and pelleted rations with different levels (0, 20 and 40%) of oats (Experiment II).

### Experimental Procedure

Experiment I involved two lots of seven pigs per lot. These pigs were fed the rations listed in Table 1. Lot 18 received the ration as a meal, while lot 19 had the same ration in pellet form. The pigs used were Duroc-Chester White crossbreds, and their average initial weight was 121.8 lb.

In Experiment II 60 thrifty weanling Duroc, Hampshire-Chester White and Hampshire-Duroc crossbred pigs were grouped into six uniform lots. The pigs were allotted on the basis of weight, sex and general appearance. During the second to the fourth week of the experiment the pigs were vaccinated for hog cholera, wormed with piperazine and sprayed with lindane for external parasites.

The rations fed in Experiment II are given in Table 2. The experimental comparisons were as follows: lot 13, high corn ration, meal; lot 14, same as lot 13, pellet; lot 15, oats (20% of the total ration), meal; lot 16, same as lot 15, pellet; lot 17, oats (40% of the total ration), meal; lot 18, same as lot 17, pellet.

**TABLE 1. Composition of Ration—Experiment I**

| Ingredients | % |
|---|---|
| Corn | 73.55 |
| Oats | 10.0 |
| Soybean oil meal (44%) | 8.0 |
| Meat and bone scrap (50%) | 3.0 |
| Fish meal (60%) | 1.5 |
| Alfalfa meal (17%) | 2.5 |
| Limestone | 0.3 |
| Dicalcium phosphate (plus zinc) | 0.4 |
| Trace mineral salt | 0.5 |
| Vitamin A and D mix* | 0.05 |
| B vitamin mix (Merck 58C) | 0.10 |
| Aurofac 10 | 0.05 |
| TM 10 | 0.05 |
| NF 180 | 0.1 |
| | 100.10 |

*Vitamin A and D supplement supplies 1700 USP units of A and 400 USP units of D per pound of ration.

*EDITOR'S NOTE: This research report was presented at the third annual Michigan Swine Day at Michigan State University. Three of the authors, Dr. Hoefer, Prof. Miller and Mr. Seerley are in the Michigan department of animal husbandry. Dr. Luecke is in the department of agricultural chemistry. Certain ration ingredients for the experiments were provided by American Cyanamid Co., Calcium Carbonate Co., Merck & Co., and Chas. Pfizer & Co., Inc.*

### Results and Observations

The results of Experiment I are given in Table 3.

1. The pigs receiving the pelleted ration gained significantly faster (23%) than the pigs fed the meal ration.

2. The daily feed consumption was only slightly greater for the pelleted ration.

3. The feed efficiency of the two

(Turn to page 55)

**TABLE 2. Composition of Rations* †—Experiment II**

| Ingredient | Lot No. 13 & 14 % | 15 & 16 % | 17 & 18 % |
|---|---|---|---|
| Corn | 77.25 | 58.75 | 40.25 |
| Oats | .... | 20.00 | 40.00 |
| Soybean oil meal (44%) | 16.00 | 14.50 | 13.00 |
| Meat and bone scraps (50%) | 2.00 | 2.00 | 2.00 |
| Fish meal (60%) | 1.00 | 1.00 | 1.00 |
| Alfalfa meal (17%) | 2.00 | 2.00 | 2.00 |
| Limestone | 0.70 | 0.70 | 0.70 |
| Dicalcium phosphate | 0.30 | 0.30 | 0.30 |
| Trace mineral salt (0.5% zinc) | 0.50 | 0.50 | 0.50 |
| Trace mineral (CCC—Swine) | 0.025 | 0.025 | 0.025 |
| B vitamin mix (Merck 58C) | 0.10 | 0.10 | 0.10 |
| Vitamin $B_{12}$ (Pfizer 9 plus) | 0.05 | 0.05 | 0.05 |
| Vitamin A and D mix‡ | 0.025 | 0.025 | 0.025 |
| Aurofac 10 | 0.05 | 0.05 | 0.05 |
| | 100.00 | 100.00 | 100.00 |

*Protein content 17.5%, reduced to 13% after the pigs reached 125 lb. The protein adjustment was accomplished by increasing the corn and reducing the amount of soybean oil meal.

†Ration cost (per cwt.): Lot 13 and 14, $2.86 meal, $3.11 pelleted; lot 15 and 16, $2.83 meal, $3.08 pelleted; lot 17 and 18, $2.80 meal, $3.05 pelleted. Ration cost includes $5 per ton for palleting in addition to $2 per ton for grinding and mixing.

‡Vitamin A and D supplement supplies 1000 USP units A and 300 USP units of D per pound of ration.

**TABLE 3. Results: Pellet Experiment I (Jan. 21-Feb. 26, 1957)**

| Lot No. | 18 | 19 |
|---|---|---|
| Treatment | Meal ration | Pelleted* ration |
| No. pigs | 7 | 7 |
| Av. initial weight, lb. | 121.9 | 121.7 |
| Av. final weight, lb. | 185.5 | 200.0 |
| Av. daily gain, lb. | 1.77 | 2.18 |
| Av. daily feed, lb. | 7.55 | 7.82 |
| Feed per lb. gain, lb. | 4.26 | 3.60 |
| Feed cost per 100 lb. gain† | $13.14 | $11.63 |

*Pellet size—3/16 inch.

†Ration cost per cwt: Lot 18, $3.08; lot 19, $3.23—pelleting cost $3 per ton.

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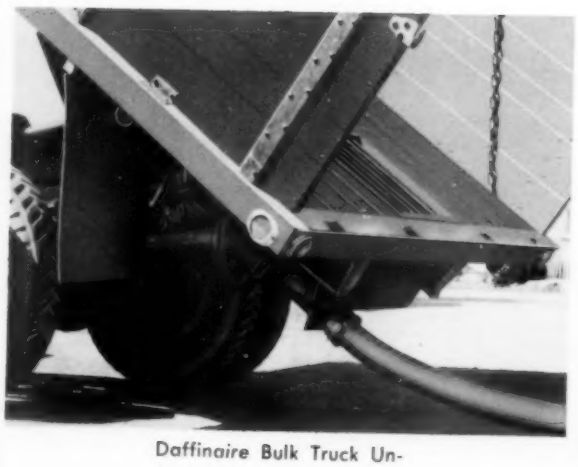

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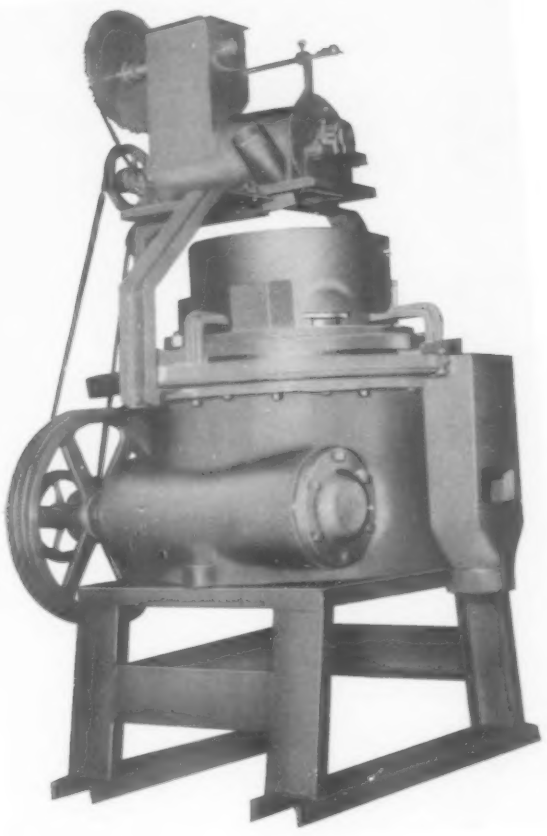

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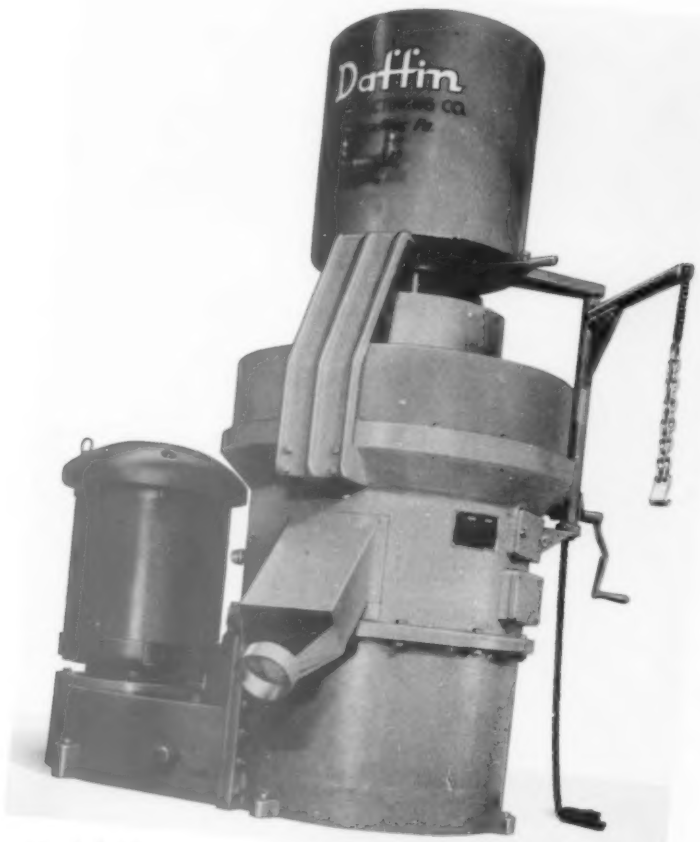


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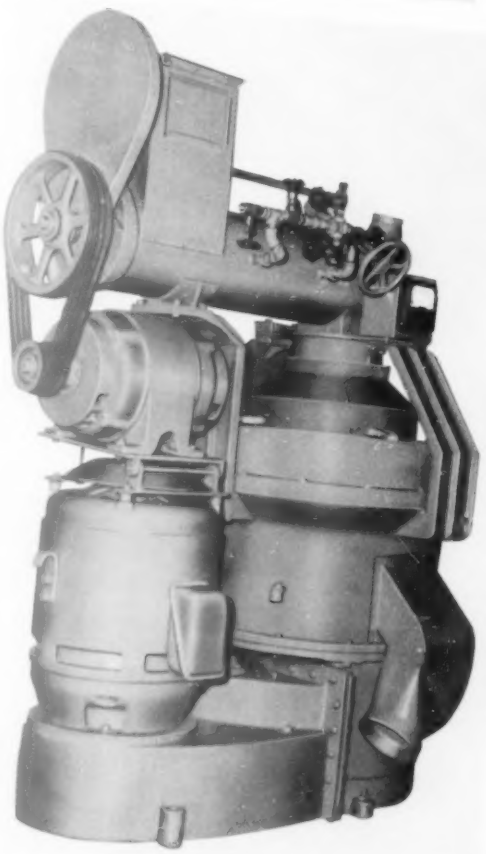

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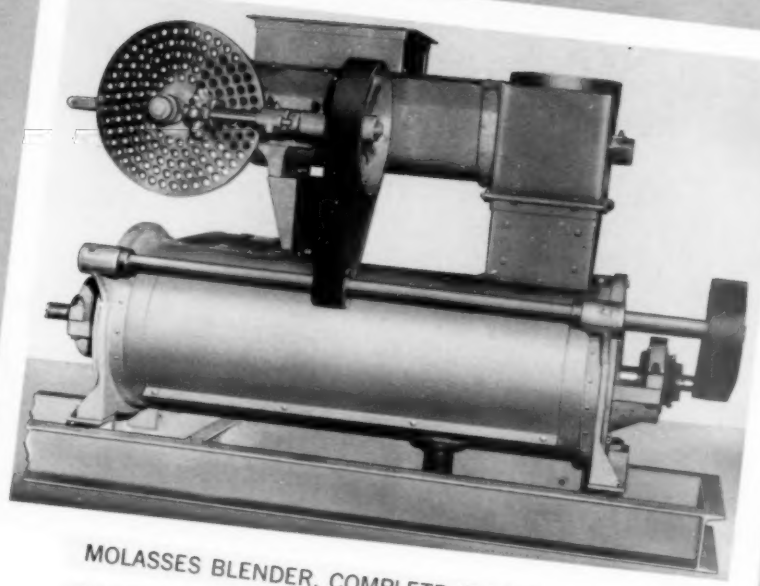

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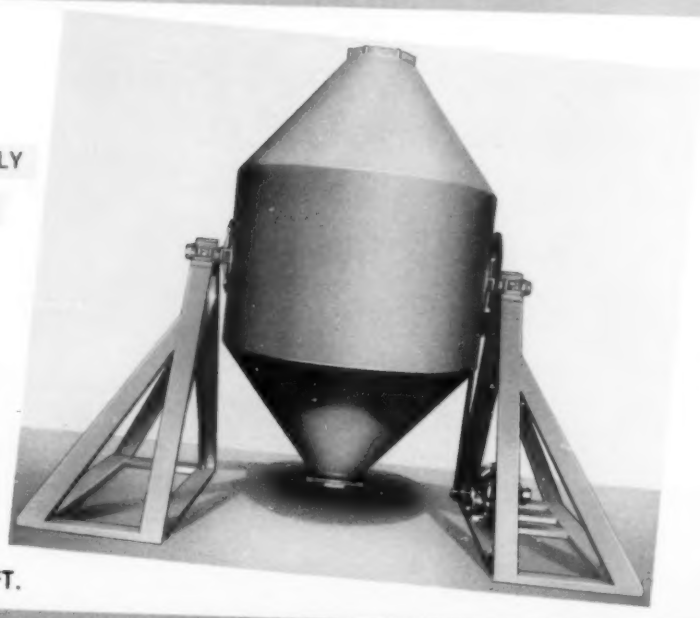

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**TABLE 4. Results: Pellet Experiment II (April 29-Aug. 7, 1958)**

| Ration / Ration preparation | —High corn— Meal | —High corn— Pellet* | —20% Oats— Meal | —20% Oats— Pellet | —40% Oats— Meal | —40% Oats— Pellet |
|---|---|---|---|---|---|---|
| Lot No. | 13 | 14 | 15 | 16 | 17 | 18 |
| No. pigs | 9† | 10 | 10 | 10 | 10 | 10 |
| Average initial weight, lb. | 31.1 | 31.1 | 30.9 | 31.1 | 31.2 | 31.0 |
| Average final weight, lb. | 183.8 | 198.6 | 177.4 | 195.6 | 160.1 | 196.2 |
| Average daily gain, lb. | 1.53 | 1.68 | 1.47 | 1.65 | 1.29 | 1.65 |
| Average daily feed intake, lb. | 4.76 | 4.83 | 4.87 | 4.81 | 4.66 | 5.15 |
| Feed per pound gain, lb. | 3.12 | 2.88 | 3.32 | 2.92 | 3.61 | 3.12 |
| Feed cost per 100 lb. gain | $8.75 | $8.80 | $9.27 | $8.86 | $9.98 | $9.35 |

*Pellet size—3/16 inch.
†One pig died (hemorrhagic enteritis).

groups showed a marked difference. The meal fed pigs required 18% more feed per pound of gain than the pellet fed pigs.

4. The pellet group averaged $1.51 (11%) cheaper gains per cwt. than the meal group.

### Experiment II

The results of Experiment II are shown in Table 4.

1. The pigs receiving the pelleted rations gained significantly faster than the pigs on the same ration in meal form. Pelleting increased the daily gains by 10, 12 and 28% for the corn, 20% oat, and 40% oat rations respectively. The rate of gain was the same for all pelleted rations, while the gains decreased as the oat level increased in the meal rations. This result suggests that high fiber feeds may be utilized better by pelleting.

2. There was no difference in feed consumption with the rations containing 0% and 20% oats either in the meal or pellet form. In the case of the 40% oat ration the pigs receiving the pellets ate 10% more feed. It should be pointed out that the feed wastage was greater in all meal lots and wastage increased as the oat content increased. There was practically no wastage in the pellet lots.

Oats are bulky and are considered to be somewhat unpalatable in swine rations. By pelleting rations their density is greatly increased and this is illustrated by Table 5.

**TABLE 5. Density of Rations (lb. per qt.)**

| Per cent oats | Meal rations | Pellet rations |
|---|---|---|
| 0 | 1.21 | 1.45 |
| 20 | 1.09 | 1.36 |
| 40 | 0.86 | 1.25 |

3. In comparing feed efficiency, the pellet fed pigs were more efficient by 8, 14 and 16% for the corn, 20% oat, and 40% oat rations respectively. In general, as the oat level increased the efficiency decreased, but the efficiency decreased much faster in the meal rations.

4. Adding oats to the ration increased the feed cost per 100 lb. of gain because of the decrease in feed efficiency. When 20% and 40% oats were added to the meal rations the cost of the gain was increased by 6 and 14% respectively. The cost differences were less for the pelleted rations, but followed a similar trend. Pelleting resulted in more economical gains only when oats were included in the ration.

5. When meal or bulky rations are fed the self feeder adjustment must be made more frequently and more carefully to prevent feed wastage.


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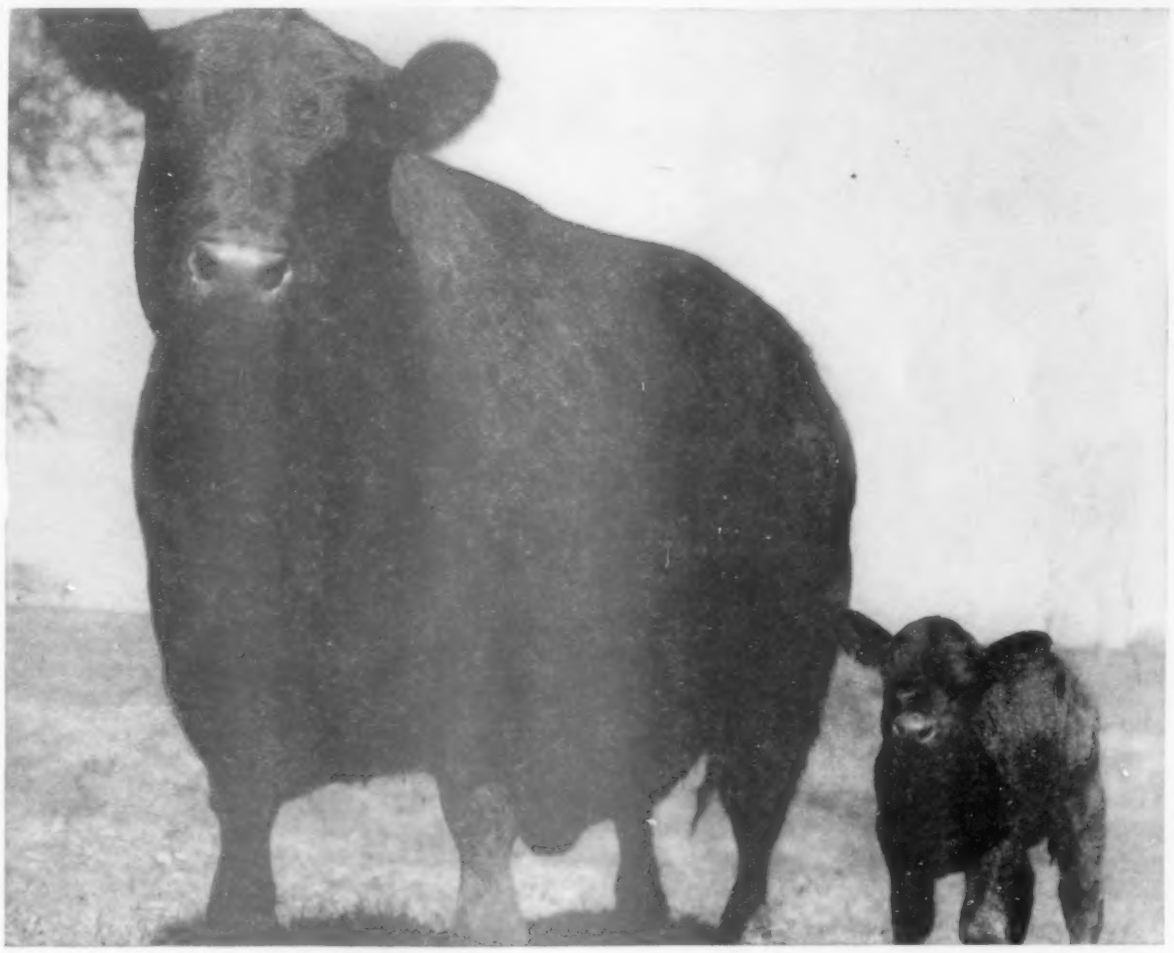

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# Tranquilizing Drugs Tested on Poultry At South Dakota

BROOKINGS, S.D. — Research so far at the South Dakota Agricultural Experiment Station indicates that tranquilizers have not been effective in improving poultry growth.

"It does appear quite conceivable, however, that some treatment with a tranquilizing drug may be worked out to show beneficial effects. At least the potential is there," it was stated in a research report by Dr. C. W. Carlson, department of poultry husbandry. "Work in other laboratories shows promise along that line."

The report also mentioned that possible effects on egg production are being considered and remain to be determined.

Dr. Carlson pointed out that there have been reports that the barbiturates have been successfully used on poultry behind the Iron Curtain, and that several reports have appeared in this country on the use of various tranquilizers for poultry, but that, generally, negative effects have been noted.

"One report from Cornell University has shown some promise with the use of small amounts of reserpine in diets to prevent cannibalism among pheasant chicks up to four weeks of age," he said.

"In a study with pheasants conducted at this laboratory, reserpine failed to reduce cannibalism and feather picking. The drug may have actually caused an increase in mortality and a reduction in growth rate."

Earlier work from this laboratory had indicated that reserpine reduced the tendency for turkeys to fight, but at the same time, slowed down growth to an unprofitable rate.

The poultry researcher said that in a continuing study at South Dakota, some results have been obtained which may indicate that reserpine has an influence upon the activity of growing chickens. White Plymouth Rock X Single Comb White Leghorn pullets were on various dietary treatments, including reserpine. Body weight and mortality averages from 12-20 weeks of age are shown in the following table:

**Studies With Reserpine and Other Factors on Growing Chickens**

| Treatment | Weight at 20 wk. lb. | Mortality, 12-20 wk., % |
|---|---|---|
| Control* | 4.08 | 12.9 |
| Reserpine, 2 mg./lb. | 3.89 | 31.2 |
| Fermentation product, 0.5%† | 4.02 | 0.0 |
| Terramycin, 10 mg./lb. | 4.06 | 5.9 |

*Typical high energy starter and grower diets were used, supplemented with the various treatments continuously from one day of age.
†Vigofac, obtained from Chas. Pfizer & Co., Inc.

Further work on layer diets is being conducted.

Dr. Carlson said a beneficial effect of reserpine upon laying hens is possible since some work from the University of California has shown that in periods of hot weather stress, reserpine was effective in maintaining egg shell strength and rate of production, as well as in preventing mortality from heat prostration.

Speaking of another test in which reserpine was given to chicks up to four weeks of age, Dr. Carlson said reserpine definitely suppressed growth, and that the data of this and other work suggest the possibility that the level used may have been too high.

"The results of several earlier studies indicated that 2 mg. of reserpine per pound of total diet was not a toxic level, but it is possible that different conditions influence this type of response," he said.

Reserpine is a drug which was originally discovered in India and is widely used for the treatment of certain mental diseases.

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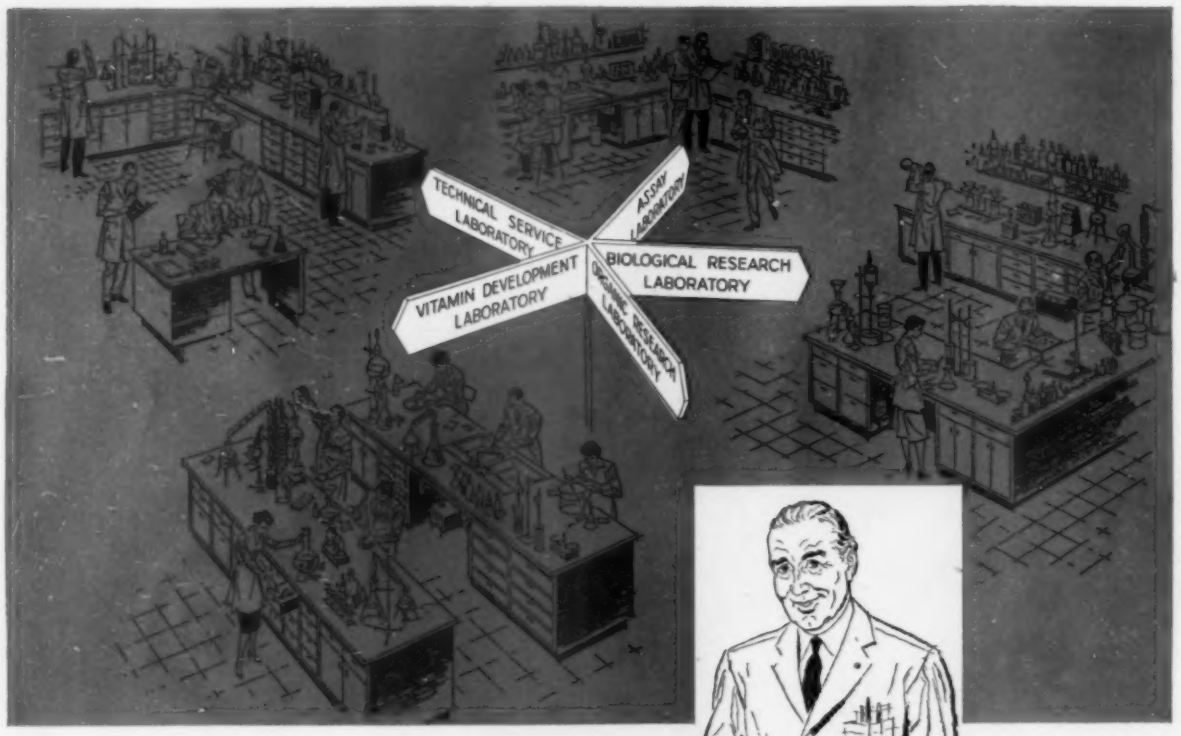
## Expanded Market Expected in Europe

DES MOINES, IOWA—Progress is expected in the expansion of existing grain markets abroad and opening up of new markets in Greece, Italy, and west Germany, reported Fred Maywald at a dinner meeting of the Des Moines Feed & Grain Club here Oct. 13.

Mr. Maywald, manager of the grain department of the Farmers Grain Dealers Assn. of Iowa, recently toured Europe as a member of a committee of three to make reports to the U.S. Department of Agriculture. Fifty-three members attended the meeting. C. D. Whitaker, president, presided.

### NEW MANAGER NAMED

LAKEVIEW, ORE.—Lloyd Baker, formerly of Redmond, Ore., has been named new general manager of the Interstate Cooperative. He succeeds L. G. (Casey) Jones, who resigned recently. The new manager has been associated with feed and grain companies in a number of capacities. He is a former member of the board of governors of the Oregon Feed & Seed Dealers Assn.

***May we help you?***

This may be a good time to remind you that Nopco-Paks are custom-formulated and custom-blended individually for you.

Nopco-Paks are skillfully blended high-quality ingredients including the superior Micratized® Vitamins A and D, formulated to your specifications.

Nopco-Paks are formulated by qualified nutritionists in Nopco's Technical Service Bureau. The bureau's efforts are actively supported by Nopco's Technical Service Laboratory, Vitamin Development Laboratory, Biological Research Laboratory, Organic Research Laboratory, and Assay Laboratory.

With this accumulation of nutritional know-how behind us, we do not have to make exaggerated claims for Nopco-Paks. Rather, we prefer to say: "May we help you work toward the ideal premixes for you—nutritionally and economically?"

Discuss the whole matter with your Nopco representative or write us direct.

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General Offices: 60 Park Place, Newark, N.J.
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Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

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FOR THE BEST IN
CORN
**CUTTERS**
SPROUT-WALDRON
MUNCY, PENNA.

# GRAN-I-GRIT'S

## New Grit Feeding Program Has Definitely Proven that Broiler Growers and Egg Producers Can Make More Money from Feed Without Adding One Cent to their Costs

It's IMPORTANT NEWS to Broiler Growers and Egg Producers when, by not adding one cent to their costs, they can increase their profits.

Results from GRAN-I-GRIT'S New Grit Feeding Program have definitely proven that this is exactly what Broiler Growers and Egg Producers can do if they feed larger sizes of GRAN-I-GRIT.

Larger sizes of GRAN-I-GRIT not only grind feed finer and more efficiently but they also keep the digestive tract open for full feed utilization by completely grinding feathers and fibrous litter that all birds eat.

Small grit that passes through the digestive tract, rather than staying and working in the gizzard, takes space needed for feed.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Mr. Gurney C. Hodges, top broiler producer of Low Gap, North Carolina, states:

## Using a side by side test—Mr. Gurney Hodges made an EXTRA $125.85 on 4,000 Broilers

"I doubted the value of grit for broilers until I was persuaded recently to make a comparative test. The amazing results which I obtained are listed in adjoining column. I followed GRAN-I-GRIT'S recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until sold. The birds consumed 180 lbs. of chick growing size grit and 450 lbs. of broiler and hen size grit. I was well pleased that feeding GRAN-I-GRIT made me $125.85 extra and believe that feeding the larger grit sizes was responsible for this outstanding result. I have used GRAN-I-GRIT on other broiler flocks with equally good results."

| | White Rocks Without Grit | White Rocks with GRAN-I-GRIT |
|---|---|---|
| No. Birds Started 2/2/56 | 4,000 | 4,000 |
| No. Birds Sold 4/10/56 | 3,854 | 3,824 |
| Percentage Livability | 96.35% | 95.6% |
| Age When Sold | 9 wks., 5 days | 9 wks., 5 days |
| Average Weight per Bird | 3.27 lbs. | 3.479 lbs. |
| Total Lbs. of Broilers Sold | 12,620 lbs. | 13,304 lbs. |
| Bags Broiler Chow Fed | 333 | 332 |
| Lbs. of Meat per 100 Lbs. Feed | 37.89 | 40.07 |
| Lbs. of Feed per Lb. of Meat | 2.638 | 2.49 |
| Broiler Selling Price per Lb. | 19c | 19c |
| Receipts from Sale of Broilers | $2,397.80 | $2,527.76 |
| Total Cost Chicks, Feed, Sanitation | 2,359.07 | 2,353.73 |
| Labor Profit and Grit Cost | 38.73 | 174.03 |
| Cost of GRAN-I-GRIT 0 lbs. @ 1½c | 0 | 630 lbs. @ 1½c 9.45 |
| Labor Profit | 38.73 | 164.58 |
| Extra Profit from use of GRAN-I-GRIT | 0 | 125.85 |

### Get Full Details—

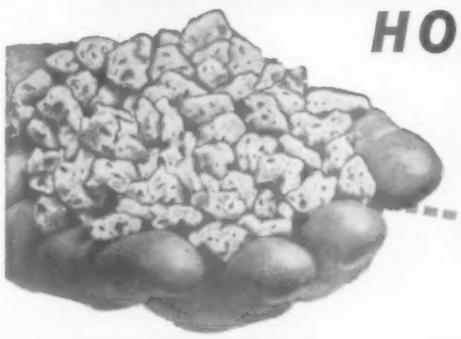
## GRAN-I-GRIT'S *New* GRIT FEEDING Program

**Top poultrymen use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the best profit producing grit they can use. GRAN-I-GRIT is insoluble . . . does not dissolve and cannot change the mineral balance of your feed.**

**We have a new GRAN-I-GRIT circular that gives full details of the New GRAN-I-GRIT program of feeding larger sizes of grit . . . the program that is proving so successful with both Broiler Growers and Egg Producers. Write today for a free copy.**

**GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor and in 25, 50 and 80-lb. multiwall paper bags.**

## GRAN-I-GRIT HOLDS THE BIRD'S EYE



### Selected 20 to One over other Types of Poultry Grit

Chicks, broilers, pullets or layers must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it. Side by side tests on poultry farms and by leading poultry authorities have proven that poultry of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . (as much as ten, fifteen, twenty to one) over grit of other colors.

NORTH CAROLINA GRANITE CORP., Mount Airy, North Carolina

Member of Granite Grit Institute of America

**THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT**

# "Who, me? Tomorrow's hope?"

We'll admit that's a pretty lofty title, young lady. But what we mean is that you and the thousands of other farm girls are mighty important to this country's future.

Whereas your farm background will serve you well in whatever lot you pursue, let's look at your future on the farm.

From our point of view, it looks like a mighty good future. There are lots of reasons why.

You see, with the population growing so fast, cities starting to burst at their seams—people will be needing more and more things from the farm. And that puts farm folks in a key position.

Why do we feel you're so important? You'll be tomorrow's farm homemaker. You'll have the job of providing your home with warmth and love and happiness. We couldn't very well do without you.

How will *living* on the farm be? Ask your mother how much things have improved on the farm just since you were a baby. Then look at all the progress that's already been made in making a housewife's life on the farm more pleasant. Why, right now you can have all the conveniences that any housewife has—even those living in the largest cities. And in years to come, living should be even more comfortable.

The way this world's population is booming, before the turn of the century there'll be 136 people to feed and clothe for every 100 today. That's a whale of an increase. And it means a tremendous challenge to the ability and skill of our farm families.

But as we said earlier, young lady, without you and your influence, the future in farming wouldn't be nearly so bright.

Did we say you're "tomorrow's hope?"

We sure did. And we think the title fits you like a crown.

Wear it proudly.

* * * * * * *

Yes, we at Cargill are convinced that this pretty young lady *is* tomorrow's hope, and we're all counting heavily on her.

We've seen a lot of farm girls grow up in our 93 years as Creative Processors of farm products, and we know the fine kind of women they are.

We know, too, that today's farm girl will fulfill her destiny in the same quiet, magnificent way her mother has . . . with the stamina of a pioneer, the devotion of a saint, and a precious gift of love and understanding that defies description.

Yes, tomorrow looks bright for this young princess and her crown.

And largely *because* of her, we at Cargill feel our future is bright, too. Through Creative Processing, our aim is to change an ever-increasing number of raw farm crops into finished products people will need and buy.

Cargill
CREATIVE PROCESSING

93 Years of Creative Processing of Farm Products

CARGILL

# Country Elevator Management Study Reported in Ohio

WOOSTER, OHIO—A study of the management practices of Ohio country elevators has been reported by Dr. John W. Sharp and C. Phillip Baumel, agricultural economics department, Ohio Agricultural Experiment Station.

The study was made of 100 elevators; 76 were cooperative, 21 were independent and three were independent line elevators. The purpose of the study was to determine management factors that are common among successful firms, with the information to be used by elevator managers as a guide to management decisions.

**Range of Findings**

Of the 100 elevators included in the study, the range of gross margins was 4.6% to 21.3%; total operating expenses ranged from 2.8¢ to 23.9¢ per dollar sale; inventory turnover ranged from 3.24 times to 59.47 times per year; accounts receivable ranged from $339 to $105,685, with an average of $28,654, and total sales volume ranged from $73,000 to $1,722,000.

"Since gross margins are the difference between purchase price and selling price, they are the major source of income for country elevators. Services are the other source of revenue. Many factors affect the per cent gross margins per dollar sale. The major influence is selling price. Competition normally determines the maximum selling price of any one commodity. Other factors such as quality of the product and the services provided also affect selling price, which in turn affects gross margins," it was explained in the report.

The economists pointed out that the wide variation in total operating expenses is explained largely by the relative volume of grain sales of each elevator. Total operating expenses per dollar sale declined rapidly as the volume of grain relative to total sales increased.

In the report it was also explained that there is little relationship between accounts receivable per dollar sale and net profit per dollar sale, and that the changes in general structure in the amount of accounts receivable do not warrant the attention given by managers. "Perhaps more attention should be directed toward decreasing uncollectible accounts and formulating a workable accounts receivable policy," it was suggested in the report.

**Recommendations**

On the basis of the study, the following recommendations were made:

"1. That country elevators should not use net profit per dollar sale as a measure of success.

"2. That analysis be directed toward using other dependent variables such as rate of return on owner's investment and net profit expressed in dollars as a measure of successful elevator operation.

"3. That further study include measuring the interrelationship between factors included in this study.

"4. That the study be expanded to include intangible or psychological factors such as alertness of the manager and policies that affect customer relationships.

"5. That elevator operators adopt a standardized accounting procedure."

The report has been published by the Ohio station as Research Bulletin 813.

**DAIRY INDUSTRY REPORT**

ERIE, PA. — Pennsylvania dairy farmers in 1957 produced over $280,439,000 worth of milk and dairy products, making this the most important farm enterprise in the state, it has been announced. Pennsylvania ranks fourth in milk production and first in ice cream production in the nation.


PUT GUARANTEED POTENCY RESULTS INTO YOUR OWN FEEDS AT LOW COST!

• YOU'LL INCREASE YOUR FEED SALES! • GET MORE REPEAT BUSINESS!
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A TOP QUALITY MULTI-VITAMIN PRE-MIX

Contains the necessary Vitamins, Antibiotics, Amino Acids, and Trace Minerals. Now you can Vitamin Fortify your own feeds with guaranteed potency for just a few cents a bag. JERSEE VITAL-MIN makes your feeds better, brings you more new business, repeat orders and a host of satisfied customers.

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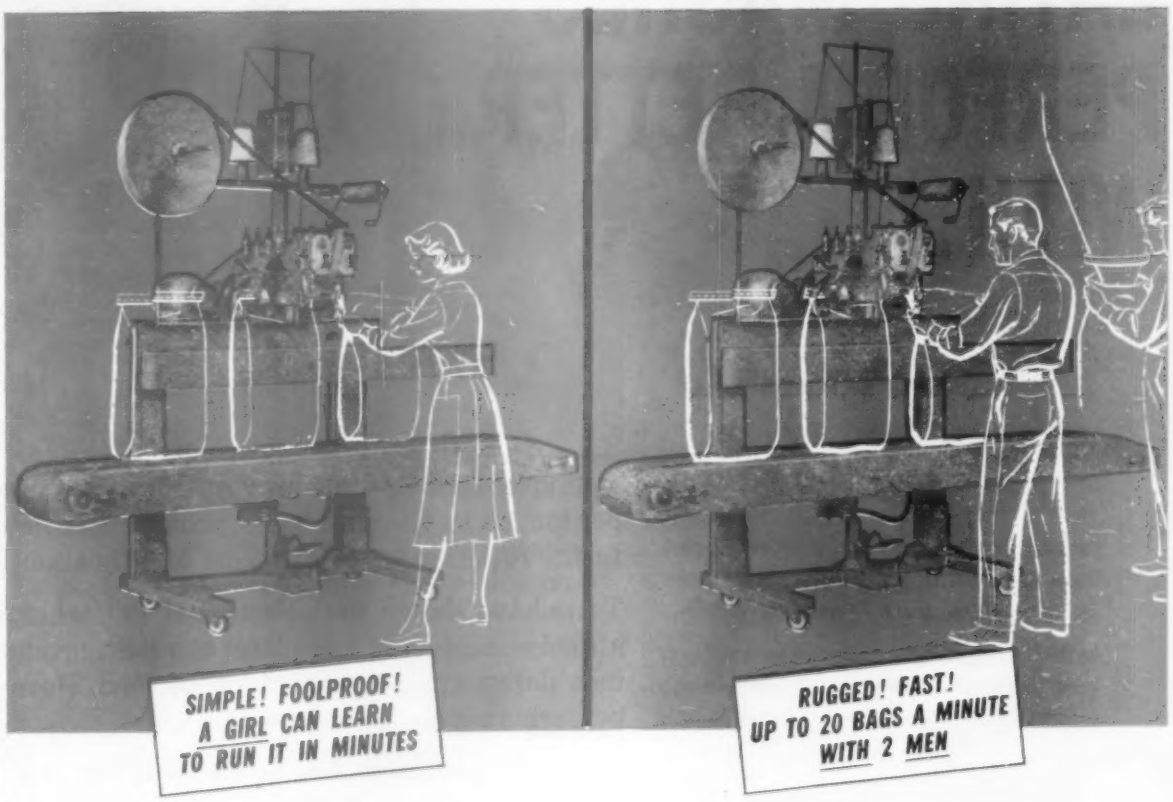


New Bagcloser Model 171
ONLY
$2650 F.O.B. Buffalo
COMPLETE WITH 9'9" SELF-LEVELING CONVEYOR, INSTALLATION and TRAINING FOR YOUR OPERATORS

*Change your ideas about output and costs!*
*Precision-engineering brings you new Bagcloser 171.*
*The most efficiency and versatility for your production dollar.*

**Longest Conveyor. 9'9"** Hydraulic "barber shop" height setting! Men stand erect. Plenty of elbow-room between fill spout and sewing head.

**Automatic Stitcher Head** controlled by bag passage. No inefficient one-leg hop; no tiring stoop or bend.

**Fast**—Up to 20 bags a minute with two men, 8 a minute with one, *steadily*, because it doesn't tire workers.

**Most Economical** and versatile machine for chemicals, feed, fertilizers, and consumer units in SOM paper bags. Caster-mounted, it works with all weigh machines and adjusts *to* spout height.

**Handles Bags 14½" to 30" High**—(Filled bags; distance from conveyor top to sewing line given).

**Explosion-Safe and Trouble-Free**—Pneumatic-clutch sewing head. Welded steel construction. Ball and roller bearings. Standard model wired to Nema 4 specs. Furnished to Nema 7 or 9 specs. at 1/3 optional cost of other machines.

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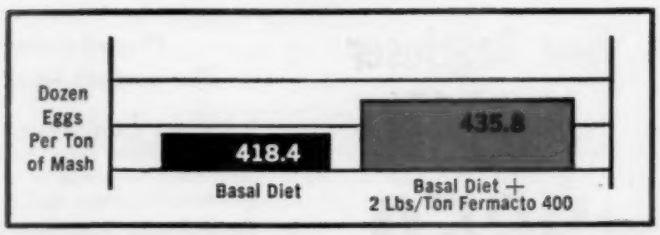
# *Borden's* fermacto 400

A unique blend of multiple fermentation factors...only two pounds per ton, on an all-mash basis, provide complete unidentified growth factor fortification... at a cost of only about *twenty-five cents.*

Tests have shown that Fermacto 400, when added to egg mashes already considered complete, can help produce as many as seventeen dozen *extra* eggs per ton of feed. Here is practical proof of performance:

**48-week test on Single-comb White Leghorns in laying house**




**OVER 17 DOZEN EXTRA PER TON OF MASH**

Results of a number of practical feeding trials are available for review. Write Borden's, or ask your Borden field representative for these test data... to see just what Fermacto 400 can mean to *your* program.

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*Laboratories and test farms at Elgin, Illinois.*

**Borden's 300**

...for more efficient, more economical egg production...without wasteful over-fortification...and, at a cost of only about $1.10 per ton.

All necessary vitamins and minerals have been blended with Fermacto 400 in one convenient, complete supplement for laying mashes. Write for details.

# Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

## New Angles on Anemia

Two iron dextran shots plus fresh soil daily help baby pigs grow rapidly and build up resistance to anemia, Purdue University animal scientists have found.

J. H. Conrad, Purdue swine nutritionist, reporting on anemia research, says that the heaviest pigs at six weeks and the highest hemoglobin levels at five weeks were obtained from a combination of iron dextran shots and fresh soil daily.

The pigs received a 2 cc. shot of iron dextran solution when they were three days old. A second shot of 1 cc. was given at three weeks of age plus fresh soil daily.

One iron injection plus soil resulted in heavier pigs and higher hemoglobin levels than two injections, one injection or soil alone.

"The hemoglobin level essential for maximum growth and disease resistance in the young pig is not known; but in the study, pigs with the highest hemoglobin level at five weeks were also the heaviest pigs at six weeks," Mr. Conrad said.

◆

## Feed Not Responsible For Udder Congestion

Recent research shows that the amount of grain fed does not appreciably influence udder congestion at calving time. In an attempt to control udder swelling, some dairymen have withheld or limited grain feeding of dry cows and cows that have recently freshened. Such practice can be harmful to the health of the cow as well as milk production, according to W. L. Northern, dairy specialist at West Virginia University.

In Cornell University studies, the feeding of as much as 15 lb. of grain per head daily during the dry period did not significantly increase udder congestion. Research conducted in Maryland and Ohio suggests that heavy grain feeding immediately after calving, as well as during the dry period, does not affect udder congestion. These findings have been confirmed by Illinois workers, who found no difference in amount or incidence of udder congestion when the feeding of 6½ to 9 lb. grain per head daily was compared to no grain feeding during the dry period.

### Questions Bulky Feeds

Mr. Northern cited that there is also considerable evidence that bulky, laxative feeds are not superior to the usual grain mix in preventing udder congestion. Good feeding practices demand that cows receive sufficient grain during the dry period to place them in good, working flesh. Overconditioning as well as under-conditioning should be avoided. The grain mix fed to the milking herd should be entirely adequate if the dry cows are being fed comparable roughage.

Approximately 7 to 10 days before expected calving, cows of the small and large breeds should be receiving 6 to 10 lb. of grain, respectively. The amount of grain fed at freshening shouldn't be reduced unless the cow is a finicky eater. This level of feeding should be maintained for about one week after calving, then grain feeding should be increased according to production needs and appetite. This method of dry, and fresh cow feeding, can help


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★ MILL FEEDS ★ LINSEED MEAL ★ SOYMEAL
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- Suspension grinding holds stock in contact with hammers by weight of the stock itself—giving a cooler, more uniform grind.
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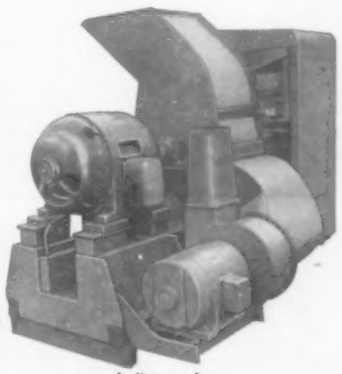
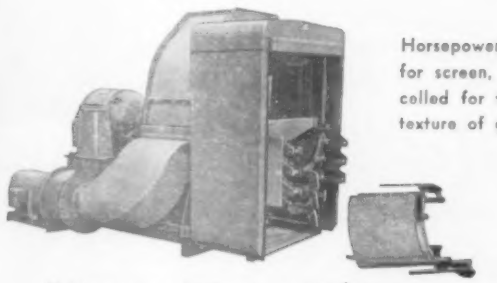
TEXTURE GRIND



Left rear view



Right rear view, showing screen magazine

Horsepower for horsepower, screen for screen, Jay Bee mills are unexcelled for their consistently uniform texture of grind.

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Please send me complete information about the Jay Bee Super-matic Model SM Hammermill
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eliminate stress on the cow and increase milk production during her lactation.

◆

## Doubling Feeder Number Doesn't Double Labor

The farmer who doubles the number of feeder calves he keeps won't double his work—even with hand feeding.

In a University of Minnesota study, 40 head of long-fed calves took 400 hours of labor over a 49-week period. Herds of 80 calves required 600 hours —only 50% more.

These labor requirements are for conventional hand feeding. They show that the biggest labor increase for the 80-head lots over the smaller herds is in silage and grain feeding and in grinding feed. Doubling the herd from 40 to 80 head increased time on these three jobs by 136 of the 200 hours of additional labor used. Therefore, it's these jobs which have the greatest possibility of being shortened by better equipment for the farmer expanding his beef feeding operation, the researchers said.

For farmers using conventional hand-feeding methods, the economists found this: Total labor hours can be estimated for a long-fed calf program by multiplying the number of head by five and adding this figure to 200. This includes feeding, bedding, watering, grinding feed, cleaning out manure, caring for sick animals and buying and selling.

Labor requirements decline most rapidly from enlarging small herds, the economists found. For example: Increasing from 20 to 30 head reduces labor per animal by 22%. But increasing from 50 to 60 head cuts labor by only 7½% per head.

◆

## Lepto Warning Given

Farmers should be on the look out for leptospirosis—a disease known for many years but one which could cause heavy losses among livestock this year.

Dr. E. Crosby Howe, extension animal hygienist at the University of Nebraska, says the disease has become more prominent during the past few years.

Cattle and swine having a mild form of the disease may suffer only a slight loss of appetite, he reports. However, in very acute cases death may occur within 10 to 48 hours. Acute cases are most serious in cattle and very seldom occur in swine except in young pigs.

Symptoms of an acute form of the disease in cattle include rapid loss of weight, jaundiced and pale appearance, loss of blood. thickened and yellowed milk, and blood stains in the milk and urine.

Cold weather cuts down on the possibility of the disease occurring. However, if the disease is suspected, local veterinarians should be contacted for a diagnosis, Dr. Howe adds.

He lists the following control measures farmers should use to prevent spread of the disease:

1. Isolate sick animals.
2. Do not drink raw milk from cows that have the disease. (The disease also can affect man.) Do not feed calves, pigs, chickens or pets milk from infected cows.
3. Bury or burn all infected carcasses and other material.
4. Clean and disinfect all equipment used in handling animals.
5. Wait 2 to 3 months before adding herd replacements.
6. Replace diseased stock with animals that are negative to the test for leptospirosis and have been vaccinated for this disease.
7. Use special care in handling infected animals and equipment.
8. Use a preventive vaccination.

Animals which have the disease should receive good care, nourishing food, vitamins and tonics, Dr. Howe added. Blood transfusions or large doses of antibiotics can also be used to treat infected animals.

**ERECTS NEW WAREHOUSE**

IOWA CITY, IOWA—Maas Enterprises, Inc., Iowa City, has erected an all-steel warehouse for the storage of corn. The new 60 by 120 ft. building has a storage capacity of 120,000 bu. A grain drier has also been installed recently.

**biggest profit maker** *by far*
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**Blatchford's** ESTABLISHED IN 1800
**CALF-PAB**
"GOOD TO THE LAST DROP" ESTABLISHED IN 1800

✔*Faster Selling!*
*Lower cost plus the Blatchford reputation for quality give you rapid inventory turn-over.*

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*Even with Calf-Pab's pre-sold customer acceptance you get full mark-up . . . assurance of profitable selling.*

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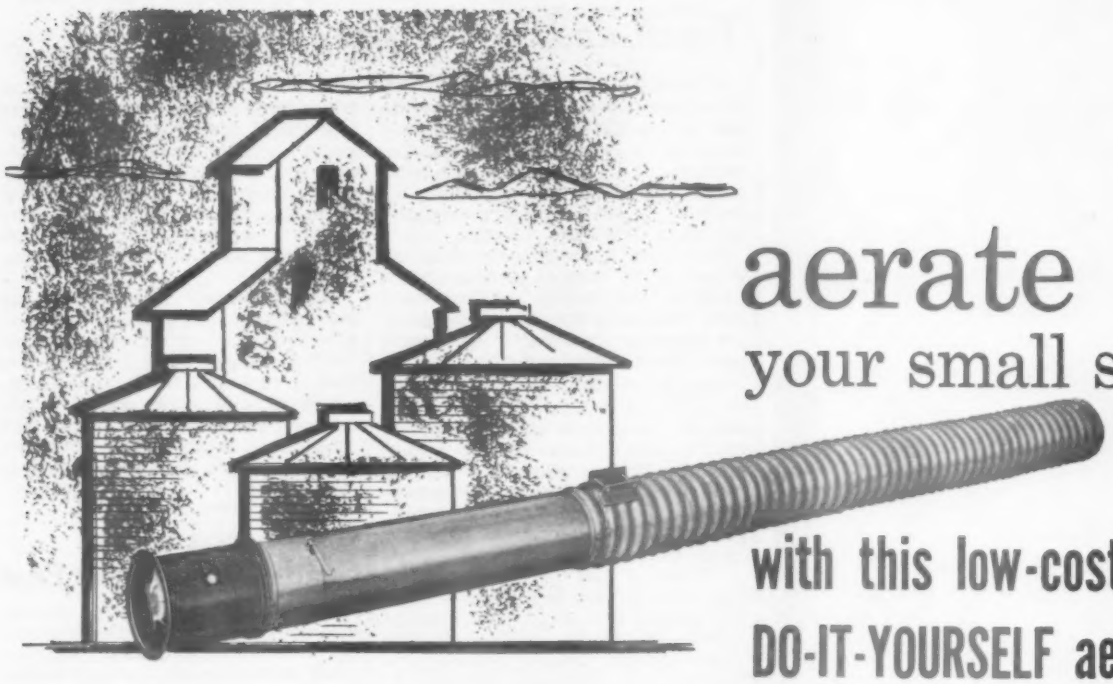

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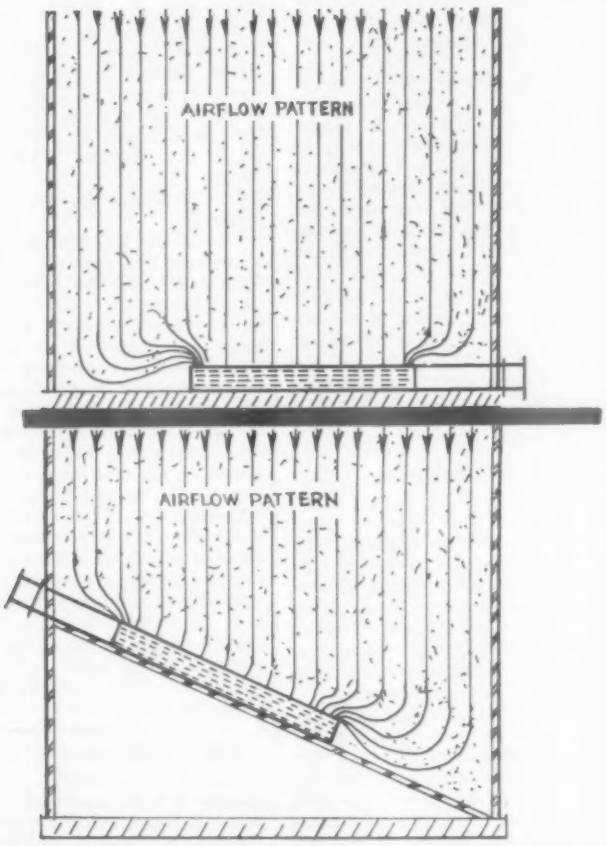
## your small storage
## with this low-cost
## DO-IT-YOURSELF aeration package

***Specifically designed and engineered for small bins.***




**The POWERATOR gives you perfect aeration in either flat or hopper-bottomed bins. Available in 8" duct for your smaller storage, 12" duct for bins up to 10,000 bushels. Fans for each size are removable, portable, and completely weather-tight. Fan operates on either 110 or 220 volts.**

Now, for the first time, you can have top quality Rolfes aeration at a new bottom-dollar price.

The new Rolfes POWERATOR, specifically designed for bins from 3,300 to 10,000 bushels, uses the same sound engineering principles that have made Rolfes famous as the leading name in commercial aeration. It offers you the same outstanding performance for small storage as the large Rolfes systems that safeguard many of the country's largest elevators.

The POWERATOR gives you genuine Rolfes aeration at a new low price . . . thanks to a design so simple and efficient that you can make the entire installation yourself. Because we don't need to furnish a crew of trained installation experts, and because no welding is required, you save the money that would formerly have been spent for labor.

The engineering's built right in to save you time and money. We supply the Rolfes Aeration know-how in this convenient package system . . . you just set it up, using the simple but complete instructions that are furnished.

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**FIRM**_____

**TOWN**_____ **STATE**_____

Max Myers

C. A. Denton

Gerald F. Combs

W. E. Glennon

George M. Briggs

J. W. McCutcheon

R. F. Brown

## Speakers Named For Renderers Annual Convention

WASHINGTON—Seven nationally-known speakers will be on the program of the National Renderers Assn. silver anniversary convention Nov. 2-5 at the Hotel Statler-Hilton here.

Officials said the speakers are Max Myers, administrator of the Foreign Agricultural Service of the U.S. Department of Agriculture; Gerald F. Combs, poultry scientist from the University of Maryland; C. A. Denton, acting head of the nutrition section of the USDA poultry research service; George M. Briggs, chief of the nutrition unit of the Department of Health, Education & Welfare; John W. McCutcheon, head of the New York consulting firm, John W. McCutcheon, Inc.; W. E. Glennon, president of the American Feed Manufacturers Assn., and R. F. Brown, sales manager, organic chemicals department, Emery Industries, Inc., Cincinnati.

They will discuss developing foreign markets for U.S. farm products, efficient poultry rations, proteins and protein quality, the next 25 years in animal nutrition, the role of tallow-based derivatives in the soap and detergent markets and new horizons for chemicals from tallow.

Business sessions of the association are expected to emphasize the growing importance to rendering of animal nutrition studies, broadening markets and continued research programs.

Tours for delegates and their families have been arranged, and a highlight of the convention will be a 25th birthday party Nov. 4 at which time the winner in the association's birthday contest will be named. Top award of the contest is to be a two-week vacation for two to Cuba.

## Tennessee Feed Meeting Planned

NASHVILLE, TENN.—A program of practical interest to the feed industry and allied fields has been scheduled for the Tennessee Feed Manufacturers Assn. convention to be held Nov. 30-Dec. 1 at the Noel Hotel, Nashville.

Dr. R. L. Kohls, professor of agricultural economics at Purdue University, Lafayette, Ind., will talk on the subject, "How Does the Farmer Shop for Feed?" The program generally will pay particular attention to how changing trends in agriculture relate to the feed industry, an announcement said.

Other speakers scheduled for the convention are Oakley M. Ray, director, market research, American Feed Manufacturers Assn., and Jonathan Keim, area supervisor, U.S. Department of Agriculture.

Mr. Ray will discuss "Contract Agriculture and the Feed Industry," and Mr. Keim will talk on "Inspection of Poultry Processing Plants."

Convention plans also include several social events, according to the announcement.

## *Pact Aims at Integration of Rail, Truck and Ship Transportation*

CHICAGO — A new concept of standardized freight shipments, welding rail, truck and ship transportation into an integrated system, is the objective of an agreement announced recently by the Fruehauf Trailer Co., Detroit, and General American Transportation Corp., Chicago.

Under the terms of the agreement, Fruehauf is licensed exclusively to build and sell trailers and multi-purpose containers specifically designed for transport on General American's new Clejan piggy-back cars.

The joint announcement said the exclusive agreement with Fruehauf has two immediate aims: (1) development of a uniform container suitable for freight shipments on all forms of transportation; (2) consequent savings to consumers and shippers through improved economy, speed and service.

"Fruehauf and General American feel that the time is ripe to pool our engineering and selling resources to develop this new cost-saving concept among the leading competitive freight carriers," said William E. Grace, executive vice president of Fruehauf. "The interchange of a standard freight container by rail, truck and water carriers offers the mechanical means of obtaining this objective," the announcement concluded.

William J. Stebler, president of General American, pointed out: "We believe that the increase in piggy-back freight in the past few months is the beginning of a tremendous swing which will be stepped up in the months ahead. We are convinced that the Clejan car and uniform containers will be the ultimate rail links in an integrated freight system."

General American, the nation's largest owner and operator of specialized railway cars, recently purchased Piggy-Back, Inc., the holder of the American patent rights on the Clejan car, a low cost, low weight and highly flexible railway car of center-sill design.

**Developed in France**

The car was developed in France and is now in operation on such American railroads as the Southern Pacific, Erie, Kansas City and Southern, and New Haven. General American recently arranged to lease Clejan cars to U.S. Freight Co. and Republic Carloading and Distributing Co., two of the largest freight forwarders in the country.

Fruehauf, manufacturers of trailers, semi-trailers, vans and containers, will develop and promote, in conjunction with General American, the uniform type of container designed to weld all types of transportation into an integrated system. It also will build trailers.

Some of the principal advantages attributed to the Clejan-type containers to be built by Fruehauf are: more economical operation than conventional boxcar movement or over-the-road truck, especially on long hauls; removal of trailer chassis and tires for savings in capital costs and elimination of needless weight, and avoidance of some costly terminal operations.

Other economy factors cited are less pilferage and damage to cargo; elimination of export packing and crating charges; quicker loading and turn-around time for ships, reducing wharfage and dock charges; fast door-to-door service for shipper and consignee; simplified bill of lading procedures, and greater flexibility in interchange.

## Cottonseed Group Sends Team to Far East

MEMPHIS, TENN. — The foreign market committee of the National Cottonseed Products Assn., Inc., has made arrangements, through Cotton Council International, to participate in a survey of potential markets for fats and oils in the Far East, it was revealed at a meeting of the association board of directors here.

A team consisting of E. M. Deck, Anderson, Clayton & Co., foods division; George M. Strayer, American Soybean Assn., and Volorous Hougen, Foreign Agricultural Service of the U.S. Department of Agriculture, will leave this month. They will visit Japan, Hong Kong, Singapore, Malaya, Thailand, Burma, India and Pakistan.

One of the teams reported that an agreement had been concluded by the association and the National Cotton Council covering cooperative efforts on cottonseed research projects that have been approved by the association's research committee. The board approved a statement of policy on the supervision of fellowships supported by the NCPA at the Southern Regional Research Laboratory.

The board also approved a policy statement, requested by the traffic committee, to the effect that the committee in its activities will consider interests of cottonseed and cottonseed products as primary. It was agreed that the committee will intervene in cases of broad action by regional freight bureaus involving boosts or reductions in rates affecting the competitive position of cottonseed and cottonseed products.

**FIRE DESTROYS ELEVATOR**

OKLAHOMA CITY, OKLA. — A $50,000 loss was suffered by the Williams & Son Feed Co. recently when a fire destroyed a grain elevator with 5,000 bu. of grain. The elevator was located north of Hennessey, Okla.

to serve the formula feed mixers

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SERVICE — from our mill to yours . . . As Scheduled!

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# Chick Output Continues to Surpass 1957

WASHINGTON—Chick production by commercial hatcheries during the month of September continued the accelerated pace which has characterized late season hatching this year.

Egg-type chicks hatched in September totaled 15,473,000, according to the U.S. Department of Agriculture, compared with 12,320,000 in September, 1957. This increase of 26% brings production for the first nine months of this year to 545,653,000, up 14% from the same nine months a year earlier.

And while demand for chicks is down seasonally, the report indicated that demand remains stronger than a year ago and that larger October hatches are in prospect for both broiler-type and egg-type chicks. More eggs were in incubators Oct. 1 for both types than on the same date in 1957.

Broiler-type chicks produced during September, totaled 127,801,000, compared with 119,321,000 in September, 1957. This brought the total for the first nine months of the year to 1,392,762,000—up 15% from the first nine months of 1957.

Broiler-type chicks accounted for 89% of the total chicks hatched during the month. The total of both types was 143,274,000 chicks, compared with 131,671,000 in September, 1957, and the 1952-56 average of 97,292,000.

**Turkey Production**

Also up from a year earlier was heavy breed poult production. While down seasonally, heavy breed production was up 59% from September, 1957. Most of the increase was in the production of heavy white breed poults which totaled 499,000 in September, compared with 311,000 the same month a year earlier. The production of other heavy breeds during September was 24,000, compared with 18,000 a year earlier.

The month's production brought the total for the first nine months of the year to within 5% of the same months in 1957.

Light breed poults were up even more sharply. The total was 546,000, an increase of 119% over September, 1957. For the first nine months of the year the total of light breed poults was about the same as a year earlier.

Turkey eggs in incubators indicate that the production will continue to be heavier in October than it was a year earlier in October, the report said. Practically all of the increase in heavy breed production will be in the heavy whites.

## North Carolina Reports Feed Tonnage Increase

RALEIGH, N.C.—Feed tonnage reported by North Carolina during the first two months of its 1958-59 fiscal year was running 25% ahead of the same period of 1957-58, the North Carolina Department of Agriculture reports.

Tonnage during the months of July and August totaled 265,134, compared with 211,430 a year earlier.

July tonnage was 36% ahead of the previous July, and August was about 16% ahead of the previous August. The August totals were 126,370 this year to 109,453 a year earlier.

**NEW ELEVATOR OPENS**

ALGONA, IOWA — Opening ceremonies for the new Farmers Elevator here were observed recently. H. Dale Cole is manager and Corwin Peer assistant manager. The elevator, with a capacity of 500,000 bu., is a branch of Mid-Continent elevators.


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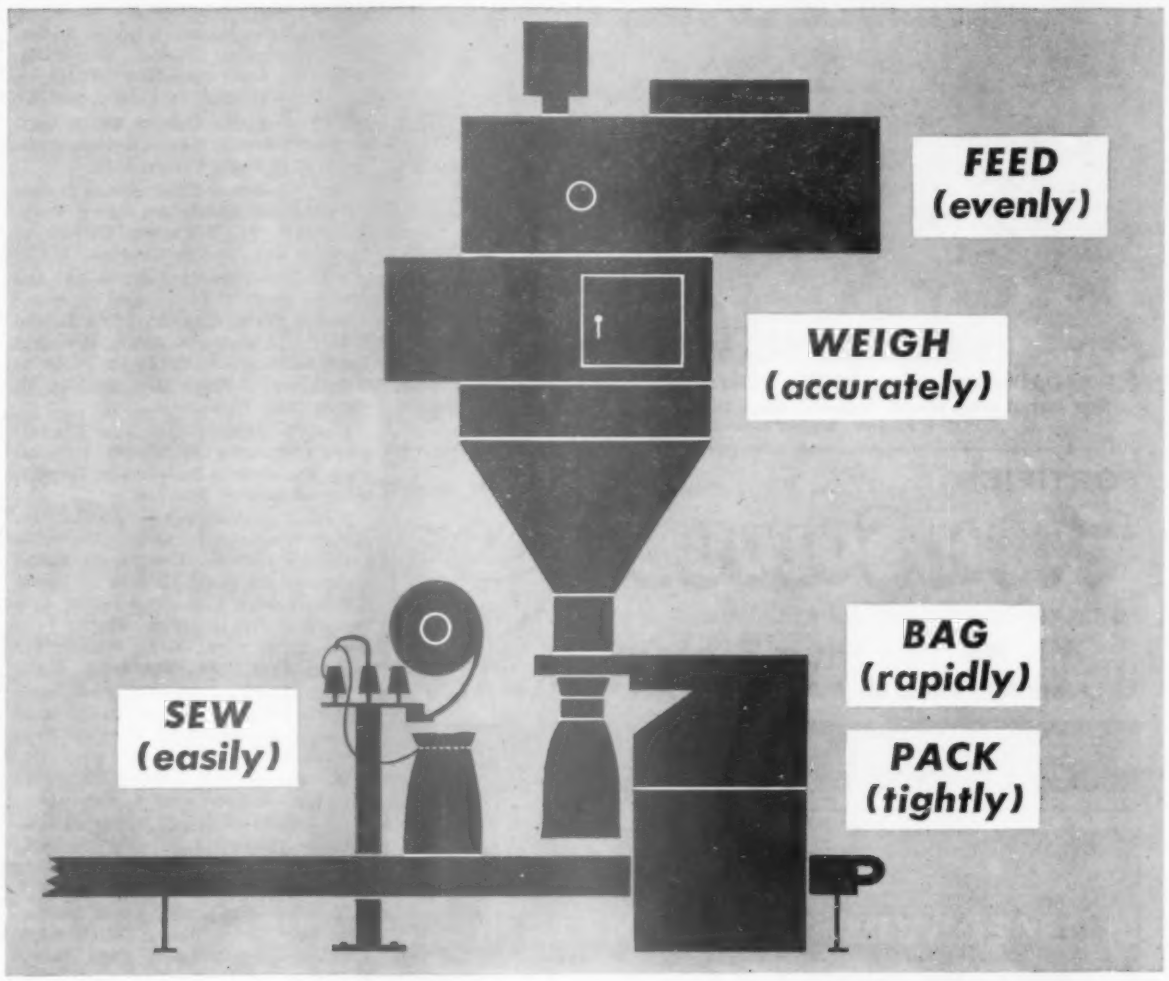


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1958

# CONVENTION CALENDAR

## New Listings

**For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.**

● ● ●

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nall, 1304 E. 7th St., Los Angeles.

● ● ●

Oct. 28—Iowa Sheep Day; Iowa State College, Ames; chm., Emmit Haynes, Animal Husbandry Dept., Iowa State College.

Oct. 30—Nebraska Formula Feed Conference; University of Nebraska, Lincoln, Neb.; chm., Dr. J. L. Adams, Poultry Husbandry Dept.

Oct. 31 — Nebraska Rooters Day; University of Nebraska, Lincoln, Neb.; Dept. of Animal Husbandry.

Oct. 31—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. George R. Johnson, Department of Animal Science.

Oct. 31-Nov. 3 — Florida Nutrition Conference; cruise from Miami to Nassau, British West Indies; chm., J. P. Feaster, Department of Animal Husbandry and Nutrition, University of Florida, Gainesville, Fla.

Nov. 2-5 — National Renderers Assn., Hotel Statler, Washington, D.C.; sec., Miss Jamie C. Fox, 30 N. LaSalle St., Chicago 2, Ill.

Nov. 3-4 — National Swine Industry Conference; Purdue University, Lafayette, Ind.; chm. Keith E. Myers, P.O. Box 241, Grundy Center, Iowa.

Nov. 5—North Dakota Swine Day; Shepperd Arena, North Dakota Agricultural College, Fargo, N.D.

Nov. 5—Jersey Chick Assn.; Berkeley-Carteret Hotel, Asbury Park, N.J.; sec., J. C. Taylor, College of Agriculture, New Brunswick, N.J.

Nov. 5-6—Illinois Feed Assn. and Illinois Poultry Improvement Assn.; Armory, Springfield, Ill. (IFA Leland Hotel; sec., Dean M. Clark, Board of Trade, Chicago 4; IPIA, St. Nicholas Hotel; sec., Aubrey Harless, Box 91, Shelbyville, Ill.)

Nov. 7—Illinois Cattle Feeders Day; University of Illinois, Urbana; chm., Dr. George R. Johnson, Department of Animal Science.

Nov. 7 — Washington Animal Industry Conference; Lower Columbia Junior College, Longview, Wash.; sponsored by State College of Washington, Lower Columbia Junior College and Washington State Feed Assn.; assn. mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Nov. 12-14 — Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Small Mill Short Course; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 15—Missouri Sheep Day; University of Missouri, Columbia; chm., C. V. Ross, Animal Husbandry Dept.

Nov. 20—Ohio Grain, Feed & Farm Supply Marketing Conference; Ohio State University, Columbus; chm., Dr. John Sharp, Department of Agricultural Economics.

Nov. 21—Rutgers School for Poultry Servicemen; Rutgers University, Brunswick, N.J.; chm., John Bezpa, Extension Specialist in Poultry Husbandry.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Nov. 28-29—American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., H. H. Stonaker, Animal Husbandry Dept., Colorado State University, Fort Collins, Colo.

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

Dec. 8-9 — Veterinarian-Nutrition Conference; President Hotel, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

### 1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 20-21—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, North Dakota Poultry Improvement Board, Bismarck, N.D.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon

### CALENDAR FOR 1958-59

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- Loads at floor level
- Reversible at flip of switch
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Lilly **REPORT TO THE FEED INDUSTRY**

# Union Stock Yards interview with two "first time" Stilbosol® feeders

*"Wanted to start right," says Clarence Youngren of Harcourt, Iowa. "Neighbors convinced me," Donald Wright of Sugar Grove, Illinois, reports.*

by Eugene S. Hahnel

**Question:** "I understand, Mr. Youngren, that this is the first pen of cattle you've ever fed Stilbosol-fortified supplement. Is that correct?"

**Mr. Youngren:** "Well, it's not just the first time I've fed supplement with Stilbosol. It's also the first cattle I've ever fed."

**Question:** "What made you decide to feed stilbestrol supplement to your first bunch of cattle?"

**Mr. Youngren:** "I figured I'd better start right. My neighbors feed Stilbosol supplements. In fact, they're pretty generally used in our area."

**Question:** "You decided to follow your neighbors' lead?"

**Mr. Youngren:** "That's a good part of it. But, I also read about the tests that showed stilbestrol in supplements saved feed and increased the gain. With feeder stuff so high, I wanted to do everything I could to widen my feeding margin."

**Question:** "How did you come out at the stockyards?"

**Mr. Youngren:** "I was quite well satisfied. I estimated my cattle at 1050 to 1075 pounds. The scales put them at 1110 pounds. They brought $27.50, which was three dollars from the day's top. I don't think that was bad for a 'first time' feeder."

"I figured I'd better start right."

**Question:** "How long have you been feeding cattle, Mr. Wright . . . and how many did you feed this year?"

**Mr. Wright:** "I've fed cattle 14 years . . . 330 head this year."

**Question:** "But, this is your first year to feed a Stilbosol-fortified supplement to your cattle, Mr. Wright?"

**Mr. Wright:** "Yes. There were two things that made me give it a try, I'd say. They were both important."

**Question:** "What were they?"

**Mr. Wright:** "My neighbors' results and comments just about had me convinced. Then, I had some yearlings which weren't gaining too well. I put them on Stilbosol supplement and they picked right up in gain. I know now that what your ads say is true. You get more gain on less feed, and it really can be the difference between profit or loss."

"More gain on less feed"

**Question:** "How did your stilbestrol cattle do at market?"

**Mr. Wright:** "Real good. The first bunch of steers brought $31.50 per hundred. The second bunch brought $31.00 a week later. These heifers just sold for $27.50. The same buyer took my first two bunches, so I'm sure he was well pleased the first time."

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(diethylstilbestrol premix, Lilly)

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2. Keeps eggs clean
3. Reduces egg breakage
4. Assures higher quality eggs

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**State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.**

**Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.**

**Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.**

**Feb. 11-12 — Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.**

**Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.**

**Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.**

**Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.**

**Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.**

**Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.**

**Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.**

**March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.**

**March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.**

**March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.**

**March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.**

**April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.**

**April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.**

**May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.**

**May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.**

**May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.**

**June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.**

**June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.**

**July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.**

**Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. v. pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.**

## Cincinnati Club Meets

CINCINNATI — Thirty-five members and guests of the Cincinnati Feed Club attended the opening seasonal dinner meeting Oct. 13 at Shuller's Wigwam Restaurant, where they heard an entertaining talk by Howard Newstate of the publicity staff of the Cincinnati Royals, professional basketball team, and viewed a film of the all-star, East-West game last spring. The next dinner meeting on Nov. 10 will be at Stine's Hide-A-Way Restaurant.


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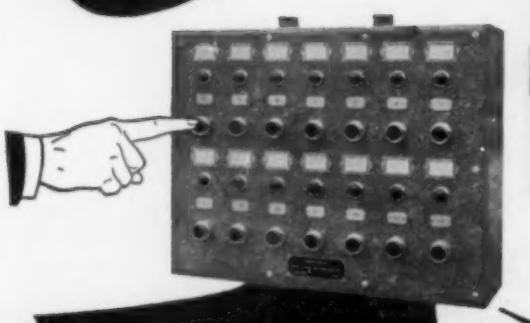

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# Numbers of Potential Layers Increase 3%, USDA Reports

WASHINGTON — The number of potential layers (hens and pullets of laying age plus pullets not of laying age) on farms Oct. 1 totaled 402,266,000, compared with 390,705,000 on Oct. 1 a year ago, the U.S. Department of Agriculture reports. This represents an increase of 3%.

USDA has been predicting that egg production would increase late this year, and further indications of this trend were given in the report.

Increases in the number of potential layers were 6% in the east north central and south Atlantic states, 5% in the West and 3% in the west north central states. Numbers of potential layers in the north Atlantic and south central states were about the same as a year earlier. Potential layers this year consist of 63% pullets and 37% hens, compared with 58% pullets and 42% hens a year ago. (See Table 1.)

In addition to the increased number of potential layers is a report of a continuing trend toward improved rate of lay. The rate Oct. 1 was 49.5 eggs per 100 layers, compared with 48 eggs on Oct. 1, 1957. Increases were noted in all regions. The USDA said principal factors in the increased rate are a trend toward well-managed, large flocks, a higher percentage of pullets in the laying flock compared with a year earlier and excellent weather during the reporting period.

The number of layers Oct. 1 totaled 305,958,000, compared with 307,380,000 on Oct. 1 a year ago.

**More Young Chickens**

The preliminary estimate of all young chickens on farms Oct. 1 totaled 283,494,000, 11% more than a year earlier. All regions of the country had more young chickens than a year earlier. Increases were 17% in the west north central states, 16% in the east north central, 12% in the south Atlantic, 10% in the West, 5% in the north Atlantic and 3% in the south central states.

Oct. 1 holdings of young chickens consisted of 55% pullet layers, 34% pullets not of laying age and 11% of other chickens. This compares with 56% pullet layers, 33% pullets not of laying age and 11% other chickens a year earlier.

All pullets on farms Oct. 1 were estimated at 252,132,000, compared with 226,892,000 last year. Of pullets on hand, 62% were of laying age, compared with 63% last year. Numbers of laying pullets were 9% more than a year ago and pullets not of laying age were 16% more.

Hens one year old and older Oct. 1 totaled 150,134,000—8% below a year ago. Hen numbers were below a year ago in all regions of the country. Decreases ranged from 1% in the West to 15% in the west north central states.

The rate of egg production per layer during September was 15.2 eggs, compared with 14.8 in September, 1957. This was a record high for the month. The rate of lay was above last year in all regions.

Prices received by producers for eggs in mid-September averaged 41.0¢ doz., up 4.1¢ doz. from a month earlier and 0.7¢ doz. from September, 1957. Prices for shell eggs were strong during the first part of the month, and most reached the year's high during the week of Sept. 4-11. Sharp declines in prices occurred during the latter part of the month as supplies increased. At the end of the month, prices were below those of a year ago at the principal markets.

## Cuban Sugar Trade Reports More Cane

NEW ORLEANS — The U.S. Department of Agriculture Agricultural Marketing Service office here has announced that early predictions by the Cuban sugar trade indicate that more cane may be available for harvest in 1959 than was harvested in 1958.

Estimates range from 53.4 to 57.3 million short tons. In 1958 there were 61,411,000 short tons available of which 53,699,000 tons were harvested. This included 50,385,000 tons of cane harvested for sugar. The amount of Cuban blackstrap molasses expected to be made in 1959 has not been determined at this time.

**TO BUILD NEW ELEVATOR**

ARKANSAS CITY, KANSAS — Plans for the construction of a 250,000 bu. concrete elevator in the Arkansas City area have been announced by the Two Rivers Consumers Cooperative.

**Hens and Pullets of Laying Age, Potential Layers on Farms, Oct. 1**

| Year— | North Atlantic | E. North Central | W. North Central | South Atlantic | South Central | Western | United States |
|---|---|---|---|---|---|---|---|
| | Hens and Pullets of Laying Age on Farms (thousands) | | | | | | |
| 1947-56 (average) | 55,621 | 62,338 | 83,996 | 30,986 | 53,109 | 34,056 | 320,107 |
| 1957 | 55,082 | 59,403 | 80,944 | 31,775 | 44,064 | 36,112 | 307,380 |
| 1958 | 53,582 | 61,266 | 78,705 | 32,272 | 42,719 | 37,414 | 305,958 |
| | Potential Layers on Farms* (thousands) | | | | | | |
| 1947-56 (average) | 75,371 | 89,386 | 131,561 | 42,211 | 73,559 | 44,163 | 456,250 |
| 1957 | 68,094 | 74,366 | 109,866 | 39,713 | 54,990 | 43,676 | 390,705 |
| 1958 | 67,783 | 78,876 | 112,838 | 41,969 | 55,114 | 45,686 | 402,266 |

*Hens and pullets of laying age plus pullets not of laying age.


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Now you can sell at a good margin of profit a badly needed repeat item. It's Sta-Kleen, a rare natural clay nesting material that gives poultrymen more clean eggs and fewer broken ones.

This remarkable product quickly coats droppings, dehydrates them, reduces egg shell soil up to 80%.

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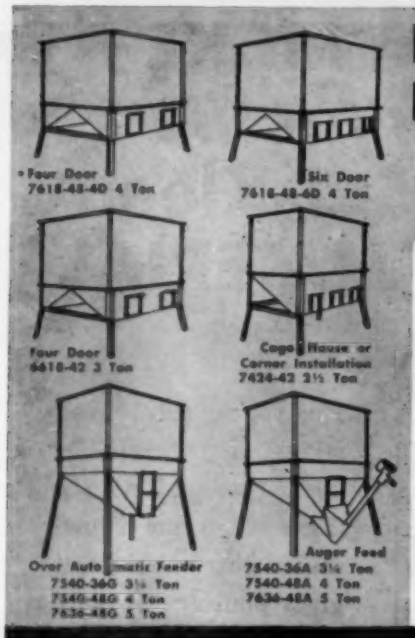


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Bases—all welded 14 gauge steel; sides—16 gauge galvanized steel; legs—¼" angles. Specially formed corners for extra reinforcement.

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## Lower Grade Barley Price Supports Set

WASHINGTON—The U.S. Department of Agriculture has broadened the price support eligibility for 1958-crop barley to include grade No. 5 barley or No. 5 garlicky barley.

This action will provide greater price protection to producers for this year's barley crop which has a higher than normal proportion of thin barley due to unfavorable weather conditions, particularly in North Dakota, the USDA announcement said.

To determine the loan rate for specific lots, barley grading No. 5 will be discounted 18¢ bu. below the basic support price for grade No. 2 or better, in addition to other applicable discounts.

Prior to this change, price support had been limited to barley grading No. 4 or No. 4 garlicky.

The minimum test weight permitted under grade standards for No. 5 barley is 36 lb. bu. The maximum amount of thin barley permitted is 35% for grade No. 4 and 75% for grade No. 5.

Similar action was taken last year to extend barley support eligibility to Grade No. 5 on 1957 production, the announcement pointed out.

The short, unhappy life of Dennis MacDougal ended at the age of 48. His bereft widow, inconsolable at first, finally got a dog to ease her loneliness. Soon she became very attached to it and her sorrow mellowed.

"She's happy because she has gotten back into her old pattern of life," mused a neighbor. "That dog is the perfect substitute for poor Dennis. He's out all day, snoozes all evening, and she feeds him out of cans."

◆ ◆ ◆

Two friends met for the first time in years. "How are things?" one asked.

"I had a bad year last year," answered his friend. "My factory burned down, and I wasn't insured."

"That's too bad," the first man sympathized. "How is your wife?"

"Dead," came the unhappy reply. "Run over by a bus in December."

"I'm sorry to hear that. But how's the rest of the family?"

"My son got sent to jail."

"Gosh, that's tough." Then, desperately searching for a cheerful subject, "How are you doing yourself?"

"Great!" came the jovial answer. "Business is wonderful—I sell lucky charms, you know."

◆ ◆ ◆

While visiting a couple who had recently moved into a new home, a friend inquired how they liked their neighbors.

"Well," said the husband, winking on the sly, "I'd say I'm pretty lucky there. We have a good-looking widow living on each side of us. Quite unusual."

"Yes, it is," his wife flashed back, "and if I catch him fooling around with either one of them, there'll be three in a row!"

◆ ◆ ◆

"There are so many rude interruptions, Mr. Chairman," complained the speaker, "that I can hardly hear myself speaking."

"Don't let it bother you," piped up a voice from the rear. "You're not missing anything."


PURE CRUSHED TRIPLE SCREENED OYSTER SHELL
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FOR POULTRY

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**PROVEN STABILITY:** Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

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# Worth Looking Into

**New Products**
**New Services**
**New Literature**

**This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.**

## No. 7240—Feed Supplement

The Peter Hand Foundation announces a new source of primary fermentation factors. "Peter Hand Culture 5" is designed for use in poultry and swine feeds to increase growth response and improve feeding efficiency; "Peter Hand Culture 5" provides five fermentation cultures in a single source of unidentified growth factors; "Peter Hand Culture 5" provides lactobacillus culture, fungal amylase culture, streptomyces culture, saccharomyces culture and ashbya gossypii culture. The product is claimed to be always free-flowing and will be available the year around since it is not a byproduct and therefore does not depend upon a seasonal production. Literature will be sent upon request. Check No. 7240 on the coupon and mail it to Feedstuffs.

## No. 7233—Poultry Nutrition Booklet

"Balanced Poultry Conditioning with the Nutritional Supercharger," a new booklet from the Western Condensing Co., contains 16 colorful pages of information and photos for poultry growers and agricultural students at no cost or obligation. The subject material includes the whey factor, poultry stress, balanced growth and extra profits. Check No. 7233 on the coupon and mail it to Feedstuffs.

## No. 7217—Nesting Material Folder

A folder describing "Sta-Kleen," a new, light nesting material produced by the Stone Mountain Grit Co., Inc., is now available. The folder says the material coats and dehydrates droppings, keeps eggs clean, reduces egg breakage, saves washing time and labor and assures higher quality eggs. Sta-Kleen, the folder says, is a natural clay processed and calcined to a light, soft consistency. It is not soluble in water and will not break down. For more details, check No. 7217 and drop in the mailbox.

## No. 7238—Hog Health Handbook

Dr. Salsbury's Laboratories has a new hog health handbook just off the press. The new 16-page publication presents 15 management tips to help protect pork profits. It includes an easy-to-follow hog health program. Illustrated in three colors, this 5½ by 8½-inch booklet is available free of charge by checking No. 7238 on the coupon and mailing it to Feedstuffs.

## No. 7224—Cattle Health Product

Ultracortenol, a microcrystalline aqueous suspension of prednisolone trimethylacetate, has been developed for veterinary use by Ciba Pharmaceutical Products, Inc. Ultracortenol is particularly indicated for ketosis and shock ("downer" cow) syndrome in milk cattle, the company says. Other indications are nonspecific dermatitis and inflammatory conditions involving the joints and accessory structures and inflammatory conditions of other organs, Ciba reported. For more details, check No. 7224 on the coupon and mail to this publication.

## No. 7234—Poultry, Hog Equipment List

The Brower Manufacturing Co. has published a new catalog listing its line of hanging feeders, nests, pig creep feeder, calf creep feeder, hog feeders and glass founts. Check No. 7234 on the coupon and mail it to secure the catalog.

## No. 7235—Grain Dockage Scale

A new scale has been developed by O. B. Armstrong to give a quick reading of the dockage percentage. Called the "Armstrong Percentage, Dockage and Computer Scale," the unit accommodates any sample from 250 to 500 grams and is designed for grain elevator operators, farmers and grain inspectors. Check No. 7235 on the coupon and mail it to secure details.

## *Also Available*

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

**No. 7157**—Automatic flat drop machine for testing filled multiwall bags, St. Regis Paper Co.

**No. 7158**—Grain fumigant pump, Tryco Manufacturing Co., Inc.

**No. 7159**—Pneumatic bulk truck with 9-in. screw conveyor, Sprout, Waldron & Co.

**No. 7160**—Portable pump for grain fumigants, Douglas Chemical Co.

**No. 7161**—Bulk feed unit, Seco, Inc.

**No. 7162**—Basic pneumatic handling systems for bulk materials, Fuller Co.

**No. 7163**—Literature on buildings, Steel Structures, Inc.

**No. 7164**—Pneumatic bulk trailer, blending device, Seedburo Equipment Co.

**No. 7165**—Bagging scale bulletin, Richardson Scale Co.

**No. 7166**—Grain aeration system, Monroe Grain Aeration Co.

**No. 7167**—Agricultural films, American Cyanamid Co.

**No. 7168**—Feed lot automation bulletin, Sprout, Waldron & Co., Inc.

**No. 7169**—Belt conveyor, Bunke-Musser, Inc.

**No. 7170**—Bulk delivery body, Dorsey Trailers, Inc.

**No. 7171**—Collecting systems for hammermills, Sprout, Waldron & Co., Inc.

**No. 7172**—Bag-bulk delivery body, Dorsey Trailers, Inc.

**No. 7173**—Pig and poultry feed unit, J. B. Sedberry, Inc.

**No. 7174**—Industrial fan bulletin, Day Sales Co.

**No. 7175**—Packaged gas producing equipment, Southwest Industries, Inc.

**No. 7176**—Rental program for Tote bins, Tote System, Inc.

**No. 7177**—Poultry feed fortification product, Borden Co.

**No. 7178**—Automatic tubular water warmer, Smith-Gates Corp.

**No. 7179** — Handbook on copy boards, Wagner Sign Service, Inc.

**No. 7180**—Bulk shipping container, Ohio Boxboard Co.

**No. 7181**—Steel buildings in color, Stran-Steel Corp.

**No. 7182**—Grain drying equipment catalog, Aeroglide Corp.

**No. 7183**—Broiler, layer coccidiostat, American Cyanamid Co.

**No. 7184**—Four-ton capacity bulk feed bin, Leach Manufacturing Co.

**No. 7185**—Automatic bag closure literature, Aeroglide Corp.

**No. 7186** — Automatic "tare-out" system, Richardson Scale Co.

**No. 7187**—Bulletin on pneumatic conveyor design, Sprout, Waldron & Co.

**No. 7190** — Feeding trial results brochure, Flavor Corporation of America.

**No. 7191** — Trough-belt conveyor, Universal Hoist Co.

**No. 7192**—Grain roller mill, W-W Grinder Corp.

**No. 7193**—Vacuum barrel handling unit, Vac-U-Lift Co.

**No. 7194**—Grain fumigator, Seedburo Equipment Co.

**No. 7195**—Bulk-bag feed body, Henderson Manufacturing Co.

**No. 7196** — Fourteen-hole laying nest, Oakes Manufacturing Co.

**No. 7197**—Peebles' 50-lb. red whey block, Western Condensing Co.

Send me information on the items marked:

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- ☐ No. 7224—Cattle Health Product
- ☐ No. 7233—Poultry Nutrition Booklet
- ☐ No. 7234—Poultry, Hog Equipment List
- ☐ No. 7235—Grain Dockage Scale
- ☐ No. 7238—Hog Health Handbook
- ☐ No. 7240—Feed Supplement

(PLEASE PRINT OR TYPE)

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From its beginning in 1908, Superior Feed Mills, Inc. — one of the country's leading feed manufacturers — has used meat meal extensively in their many feeds.

This company finds that meat meal in feed is necessary for a proper balance of animal and vegetable protein, which provides the high productivity customers today are demanding. Meat meal supplies necessary amino acids and vitamins, plus many additional growth factors, known and unknown.

Mixing and application is simple and economical, since the meat meal is received pre-ground and ready to add—with other ingredients—to the feed.

## *50% Meat and Bone Meal Provides:*

- 32 Times The Calcium
- 6 Times The Phosphorus
- 2 Times The Riboflavin and Niacin
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## 150-Day Market Hogs Predicted

URBANA, ILL.—Top hog producers will soon be shooting for market-weight hogs in 150 days.

And these hogs will eat less than 300 lb. feed for every 100 lb. gain, says G. R. Carlisle, extension livestock specialist at the University of Illinois College of Agriculture.

Swine growers will use performance-tested breeding stock and modern complete rations, possibly in pelleted form, and will give more attention to control of temperature and disease to help reach this goal, Mr. Carlisle said.

Average performance figures for more than 50 boars in one Illinois boar-testing station this year show 1.8 lb. daily gain and 290 lb. feed for every 100 lb. gain from 50 to 200 lb. The best performing boar gained more than 2 lb. a day and needed only 240 lb. of feed for every 100 lb. of gain.

These results are better than figures given in the latest edition of a standard text on swine feeding. It says that with good management and adequate rations pigs can be expected to gain 1.75 lb. a day from 50 to 200 lb. and use about 350 lb. of feed for every 100 lb. of gain.

Mr. Carlisle said these figures show that Illinois swine have not nearly reached the ceiling on performance.

## Fulton Bag Begins Modernizing Program

ATLANTA, GA.—Fulton Bag & Cotton Mills, Atlanta, has embarked on a program of modernization and development to be completed within the next several years at a cost of $2 million, according to Clarence E. Elsas, president.

Mr. Elsas said that Fulton will cease making textile bags about the end of 1958 due to the nationally declining market for these products. At the same time, he stated, the company's textile sales generally have increased at a rate greater than anticipated, making it necessary to take over facilities formerly devoted to textile bag manufacturing. This change is in keeping with Fulton's policy of concentrating its efforts on producing and finishing industrial fabrics, canvas and laminated products.

Within recent months the company has added new equipment and expanded machinery in many departments. Special emphasis will be placed in further streamlining and enlarging the finishing departments. Among the developments will be equipment to process plastic coated and wrinkle resistant finishes.

New quilling equipment has been installed to handle coarse yarns in the mills along with the extension of Barber Coleman spooling. Work has been completed in the warp spinning and warp preparation departments which increased their efficiency and production. Part of the modernization program under way includes the addition of printing machinery for the toweling departments. A new laminating machine has been added to the present battery for producing waterproof laminated papers and textiles, said Mr. Elsas.

**GOOD FISHING—Charles L. Davidson, Jr., Stone Mountain Grit Co., Lithonia, Ga., picked up a lot of interesting information at the recent World's Poultry Conference in Mexico City, including the fact that waters off Acapulco are highly productive when it comes to catching sailfish. The one shown weighed 110 lb. and was 9 ft., 8 in. long. He caught another one the same size. Also in the picture is Mrs. Davidson. A number of Americans at the Mexico City meeting flew to Acapulco and other points of interest to catch a few sights, and fish.**

## Distributor Named for Poultry Litter Product

INDIANAPOLIS — The Anderson Box Co. of Indianapolis has been named an exclusive distributor of Southern Sunshine peanut hull poultry litter, it was announced jointly by officials of Gold Kist Peanut Growers and the Anderson firm.

In addition to the present distribution, the Anderson company will provide its nationwide network of branch warehouse locations for shipping service and customer pick-up.

The Southern Sunshine litter is made of peanut hulls that are compressed and packed into corrugated fiberboard cartons, with each carton containing enough litter to cover 120 sq. ft. of floor space.

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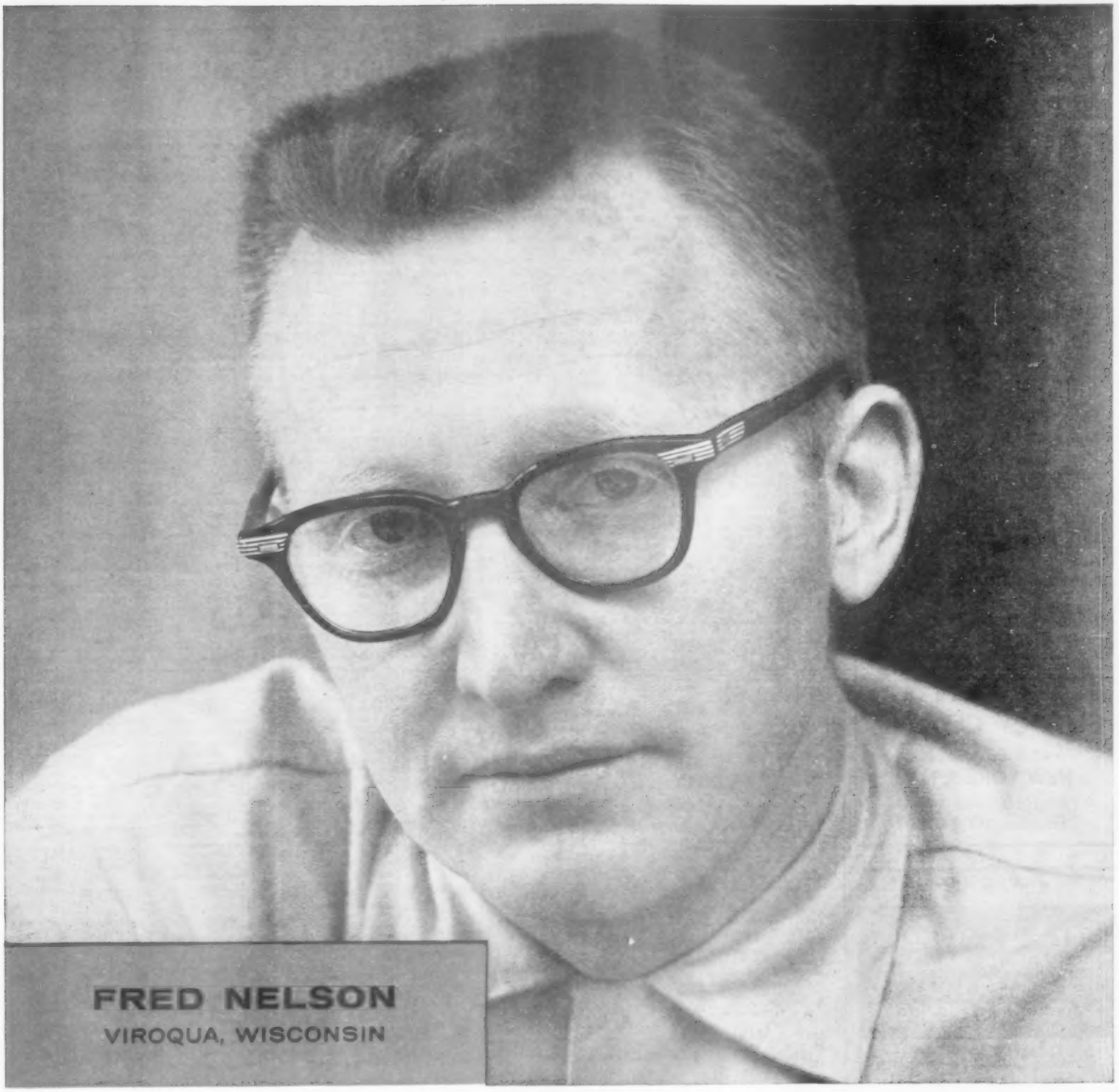


# *"Nearly half of my salt sales are Trace-Mineralized"*

"We have experienced a steady increase in Morton T-M Salt volume in the past two years," reports Mr. Nelson of Nelson Feed Mill & Elevator Company at Viroqua. From 45% to 50% of his total salt tonnage of 85 tons is now T-M Salt.

Mr. Nelson advises other dealers to expect further increases in *profitable* T-M business as more and more farmers switch from plain salt to T-M.

"It pays any dealer to sell his customers on using T-M instead of plain salt for livestock. We use trace-mineralized mixing salt in all our feed mixes and advocate the use of T-M Salt to all customers.

"It is my firm belief that farmers should feed trace-mineralized salt and from my experience I recommend Morton T-M. My customers can then be sure their animals get all the minerals so necessary for health and good feed conversion," states Mr. Nelson.

**Sell more Morton T-M for extra profit.** If you already handle Morton T-M Salt you can increase your business and your profit by following Mr. Nelson's example. If you don't handle Morton T-M Salt but would like to, just write to the Morton Salt Co., Chicago, Ill.

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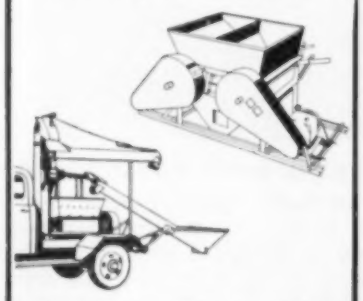

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# FEEDSTUFFS

A WEEKLY NEWSPAPER

For the Feed Manufacturer, Feed Jobber Feed Broker and Feed Dealer


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# Planned Management Program Gives Dealer Control of Costs

**Attention to details cuts expense, builds sales and profits for young Iowa feed dealer who looks for his helping hand "at the end of my arm"**

By Warren B. Smith
Feedstuffs Special Writer

It's hardly news to feed dealers that business is daily becoming more competitive; the profit picture appears dim to many. But the situation is not discouraging to Richard (Dick) W. Maehr, owner and operator of Maehr Feed & Supply Co., Inc., Davenport, Iowa.

He is doing something about it.

Development of better business management has led to tight control over costs and elimination of unnecessary expense. And by merchandising as never before, this Iowan has developed an excellent sales and profit picture.

"1958 will be our best year," he comments.

The business was founded by Arnold Maehr, Dick's father, during the depression of the 1930's. The younger Maehr started in the business sweeping floors for his father and he assumed control of the firm in 1951, following his father's retirement.

The company, a family owned corporation, specializes in custom grinding, mixing and shelling. It also handles Hubbard Sunshine concentrates and manufactures its own feed, the Crackerjack brand.

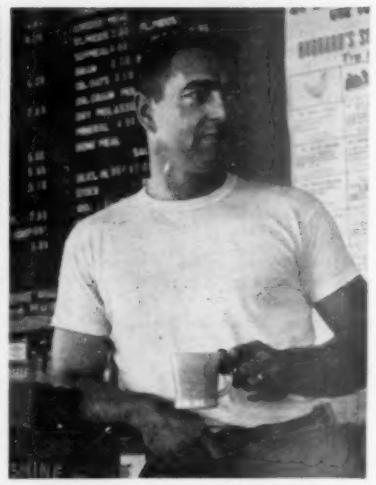
"The name comes from the thirties," Dick explains, "it was a popular expression then."

### Steady Growth

Although the Davenport area is highly competitive, the Maehr firm has grown each year in total volume.

"Efficient management and customer service are important in any business," Dick says. "We don't claim to be hot-shots. But we're in there trying.

"A lot of feed dealers are crying the blues these days," he continued, "with competition becoming more intense each day. But they're doing little to help themselves. We should all remember that the helping hand we're looking for is usually on the end of our arm."



**FRIENDLINESS — Customers at Maehr Feed & Supply Co., Inc., Davenport, Iowa, may have a cup of coffee when they enter the firm to do business, for the "customer is king" at the firm. Non-coffee drinkers get soft drinks and the kids are armed with suckers and candy. Christmas gifts and birthday gifts also go out to many customers "to let them know we're thinking of them," said Dick Maehr, operator, who is shown here with a cup of coffee.**

### 12-Point Program

Outlining his management program, Mr. Maehr explained several factors that have enabled his firm to increase sales and improve profits. They are:

**1. Invite trade by making the business attractive.**

The Davenport firm is housed in a modern, well designed brick structure on a major highway outside the city limits. "People prefer to trade in a modern place," Dick explains, "but most of all, a clean place."

Maintenance of the store and mill is a daily program. This includes windows, floors, rest rooms, etc. And the "white glove" technique has paid off, resulting in an attractive operation.

"Most of all, we make sure our merchandise and displays are dust-free," the Iowan explains. "An article can be two days old, but if it's covered with dust, it's going to look two years old."

The building was designed and constructed by Mr. Maehr after he vis-

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ited several modern mills, noting their production, storage and display facilities.

**2. Modern bookkeeping and records system.**

The office system is custom-designed to evolve around the cash register, saving several hours monthly through simplicity of operation. Mrs. Maehr prepares the books periodically, keeping them current at all times.

"Our books used to be on a hit-and-miss basis," Dick explains. "Then we had a CPA set up a complete system for our needs. It cost several hundred dollars, but it has sure paid for itself in time saved and in better records."

**3. Organization of time.**

Improved employee assignment is another innovation. Dick is assisted by three employees. Each knows his daily duties and nothing is left to haphazard arrangement.

"We each try to carry our share of the workload and it still leaves me time to contact farmers in outside sales work."

Employee turnover is almost nonexistent at the firm. "We believe in getting a good man and paying him a good wage," Mr. Maehr explains. "I don't want to be the trainer for someone else's help."

**4. Better inventory control.**

"You can't sell what you haven't got," is a by-word with the firm. "It's a little trite," Dick agrees, "but when a customer wants something, he doesn't want to wait."

This has led to close attention to each item in stock, and has also resulted in handling a comprehensive line of accessory items.

The firm stocks animal remedies and serums, livestock feeders and other equipment. "We watch this accessory inventory closely at all times, to keep it active and in demand," he said.

**5. New products.**

The firm likes to be first to handle a new product, "providing it has merit," Dick states. He emphasized that obtaining new products before the newness and excitement of their introduction has worn off helps in selling.

"Purchasing new products also has another benefit," he added. "The manufacturer usually advertises quite heavily with the initial promotion, creating a customer demand.

"Close attention to advertisements in trade journals and careful attention to sales literature and salesmen are the best methods of keeping up with new products," he says.

"We were one of the first to handle certain health products around here," Mr. Maehr continues. "Now we've got a number of customers who buy only those products here, simply because we were one of the first to have them."

**6. Renewed attention to advertising.**

The firm participates in every worthwhile manufacturer's cooperative advertising offer and also advertises in a free-distribution, rural shopping newspaper.

"We have a tendency to use direct mail over other media," Mr. Maehr explained. "There's a reason for this, too. I feel it gives complete control over who is to receive our sales message and it lends an air of personal contact with the customer."

"It's expensive," he said, "especially with the new postage increase, but our advertisement isn't fighting seven others for the reader's eye—as in a newspaper."

The firm uses the Hubbard system of direct mail promotion, tied in locally with its own efforts. This provides a continuing program throughout the year.

**7. Better purchasing.**

Purchases are planned to take advantage of free delivery and the discounts obtainable for larger orders. Small orders are frequently ganged to allow free delivery savings. Inventory records are watched closely and orders placed accordingly.

"We are very conscious of name brands," he comments, "but we shop around a little more than formerly. But the quality has to be equal."

**8. Pay bills promptly.**

Two percent doesn't sound like much, and it isn't—on a dollar or two. "But 2% of $10,000 is $200—and that's money in any man's wallet," Mr. Maehr said.

As a result, he feels that keeping track of all purchases and paying bills promptly are another source of profit.

**9. Offer incentive for regular patronage.**

"We try to treat the customer like a king," the Iowan said, as he outlined the many extras provided customers. A restaurant-type coffee urn sits in the show room, affording free coffee to customers, who may help themselves. Non-coffee drinkers are given free soft drinks, and customers' children are also recipients of soft drinks, plus candy and suckers.

"It gets to be a treat for the kids to come here with their dad," Mr. Maehr said. "The coffee idea was my idea of welcoming any man who walks in the place, whether customer, salesman or what have you."

The firm also mails out birthday presents and Christmas gifts to numerous customers. "It's expensive," the feed dealer admits, "but it's a good way of building good will."

**10. Offer incentives for bulk purchasing.**

Credit assistance and discounts for bulk purchases are an intregal part of the company's sales program. It offers no discount for cash, but has a tonnage discount that starts at $2. A discount is also offered on the concentrates handled by the firm, when mixed in the mill.

Customers may use Hubbard deferment contracts, if the usual 30-day terms are too confining. "With a bulk discount of $2 per ton, we have a number of customers who buy in bulk and, in effect, pay nothing for financing," Mr. Maehr said.

**11. Charge current retail prices.**

The firm stays as close as possible to current retail price structures. Instead of price, merit of products, the store and its sound service program are prime sales points.

**12. Those little extras.**

"It's a lot of little extras that help the customer," Mr. Maehr believes. "We used to have a lot of trouble with customers calling us. A number lived on party lines. By the time their line was open, they'd often get a busy signal from us. A couple minutes wait and they would usually lose the line to a neighbor.

"It was quite irritating for everyone concerned until we installed a telephone monitoring system." The system allows the firm to use two different numbers, with three telephones. When the regular number is sought, and the line is busy, the caller is automatically switched to one of the open phones at the feed store.

"It costs $17 a month, but it's sure worth it," Mr. Maehr declared.

**Jake Bustad**

**SALES MANAGER—Appointment of Jake Bustad as sales manager of the livestock division of Yoder Feeds, Inc., Kalona, Iowa, was announced by Lester Yoder, president. In his new position, Mr. Bustad will be in charge of salesmen and bulk feed delivery servicemen. He was formerly with the Farm Bureau in Clayton and Osceola counties in Iowa.**

## FEED BUSINESS SOLD

NELSON, WIS.—The Alma (Wis.) Farmers Union Cooperative has purchased the feed store building and general merchandise building owned by John Kennedy here and will operate branch businesses in the buildings. The Nelson branch of the Alma cooperative will handle a complete line of Co-op feeds, tires and miscellaneous merchandise.

**CAREFUL MANAGEMENT COUNTS—This is the exterior of the Maehr Feed & Supply Co., Inc., Davenport, Iowa, a firm which makes a strong bid for the customer's dollar through sound, basic management and service. The first point in the management program of Richard Maehr, operator, is to invite trade by making the business attractive and clean.**

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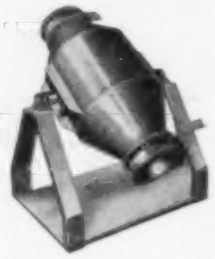

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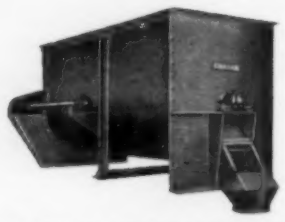

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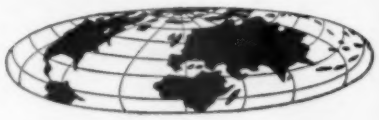

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# Survey Shows Southeast Moves Toward Livestock, Grain Farms

MACON, GA.—The emergence of southeastern U.S. as a farming area moving away from tobacco and cotton toward livestock production was given in a survey completed here recently.

Livestock Breeder Journal, a Macon publication serving cattle breeders in the Southeast, conducted the survey among its readers to find out what changes have actually taken place in southeastern agriculture.

Readers were queried on the kind of farming they do, the number of various kinds of livestock they own, their feeding programs and other questions.

According to information gathered in the survey, the average cattleman answering the survey utilizes upwards of 500 acres in his cattle operation, has around 50 brood cows in his herd, and he usually fattens about 100 steers for slaughter. He plants 20 or more acres to small grain and 60 acres of corn for feeding the cattle in his feed lot and for fattening hogs, of which he may market as many as 30 in a year.

His livestock farming frequently includes as many as 10 dairy cows and he may also feed breeding ewes and raise young lambs for market. Seldom does he bother with cotton, truck crops or tobacco.

**Diversification**

Of the cattlemen queried, 74% said they engage in other types of farming. A total of 39% said they plant at least 60 acres of corn, and only 21% said they plant cotton. The response on planting small grain was 75%. More than half of them farm up to 500 acres and 36% control more than 500 acres.

In answer to the question, "Do you own brood cows?" the affirmative response was 94%. A total of 47% fatten steers for slaughter. Of these, 89% said they had less than 100 steers. Less than 3% feed more than 300 steers.

The survey indicated three distinct phases of cattle business for the breeder: purebred breeding stock, commercial feeding on grass and commercial fattening in a drylot operation. While the survey indicated that the average breeder may engage in all three, the responses also indicated that each is a separate unit of the cattle farm.

Following selection of replacement stock for the purebred foundation herd, the rest of the calf crop may go onto pastures on the cattle farm or be offered as feeders and stockers for the commercial operator.

The commercial operator indicated that with the increase in the grain crop raised locally, plus the advantage of buying corn shipped in by low-cost, barge-truck routes, he is finishing out his cattle in his own drylot.

Modern developments in the nutrition of beef cattle, starting with permanent pastures of good grass, have shown him the advantages of supplements including cottonseed, linseed and soybean meal as well as complete commercial protein rations. He is also interested in the use of antibiotics, hormones and tranquilizers.

His processed feeds normally are designed to supplement the type of pasture grass, hay and silage he feeds as roughage. The most predominant feed used is the protein concentrate feed with his own homegrown grain or that purchased in relatively large bulk quantities.

The cattleman who is primarily a feedlot operator uses a complete manufactured feed to supplement his roughage. There is also great interest by this group in the development of pelleted, dehydrated roughage.

Another trend of recent years has been a growing interest in mixing feed on the cattle farm. Instead of relying on the local mill to mix the feed, the cattleman is mixing on his farm, purchasing concentrates in quantities consistent with his feed requirements.

This trend appears to have followed the development of commercial corn counties in the Deep South and along the Atlantic Seaboard. The magazine reported that, on the surface, it would appear from the breeder's answers that he soon may be able to secure all his grain locally. At the same time, however, there is a trend toward increasing the number of cattle on feed and the finishing period.

Answers to the question covering use of processed feed by the cattlemen show the following percentages: 53% feed grain; 73% feed manufactured protein concentrate; 34% use manufactured minerals; 21% use manufactured protein mineral; 62% feed plain salt; 71% feed mineralized salt; 42% mix their own feed, 44% use manufactured feed.

Fourteen of each 100 farm units reported feed mills, five in 100 reported feed cookers, and 17.5 in 100 reported grain rollers.

The average cattleman puts up about 250 tons of hay a year and about the same amount of silage. Alfalfa or other legumes are his first choice for hay, and corn is his preference for silage.

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## There Is Always a Way to Solve Problems

By Al P. Nelson

A lean, brown-haired boy of about 12 came slowly into Joe Brooks' office. He stood and waited until Joe looked up from his desk. The feed dealer recognized Tom Harrigan who lived with his grandmother at the edge of town. Tom's grandmother had a flock of 50 hens, a couple of pigs and a cow, besides a sizable garden, and it was Tommy who did most of the work around the place, since grandmother had been quite sick during the past year.

"Hello, Tom," said Joe cheerily. "How are the chickens laying?"

"Oh, they are laying very well," Tom said, "and we've got steady customers for our eggs. But it's this feed bill of $11.75 that I'm worryin' about. Honest, Mr. Brooks, I feel pretty bad about not payin' it before. Grandma's been pretty sick the last few months and a lot of our money has been goin' for heart pills and things like that."

"I know, Tom," Joe said kindly, looking at the bill the boy had handed him. "We haven't been pressing you for payment, have we? Of course, we do send out statements every month. That's business."

### Real Trouble

The boy nodded. "We've been doin' so well the last few years, Granny and me. She worked hard with the chickens and the garden, and I helped her. And then my newspaper route brings in somethin'. But we can't make all expenses much longer. We've got to apply for welfare aid."

Again Joe nodded his head in sympathy. "Well, don't feel badly about that, Tommy. There are a lot of old people who have to get aid like this. Granny owns her home and two acres of land, doesn't she?"

"Yes," said the boy, "and we've managed to keep it clear of debt. But now the county welfare wants to take what they call a lien or somethin', for the amount of aid Granny will get. And she feels terrible about it. She says she hasn't been a charity patient ever in her life, and she doesn't want to be one now. I wish I could help her, Mr. Brooks."

"I know just how you feel, Tommy," said the dealer, "but it's too big a job for a young fellow like you. You're not ready to take all the responsibilities of supporting a home. You've helped her a lot, and I know you're going to help her some more. But you tell Granny she needn't be ashamed to take welfare aid from the county."

"Why not?" asked the puzzled boy.

### It's Like a Loan

"Because she isn't getting charity money from them," Joe explained. "They are just loanin' her money on her house and land. When Granny dies, the county welfare will have to be paid back out of what you get for the sale of her property."

The boy brightened. "Oh, is that the way it is? Then she's really usin' her own money. It's like takin' it out of the bank."

Joe nodded. "Of course it is, in your Granny's case. But some people get welfare aid that don't have any houses. In that case it's a straight out and out gift by the county. But not

(Turn to page 85)

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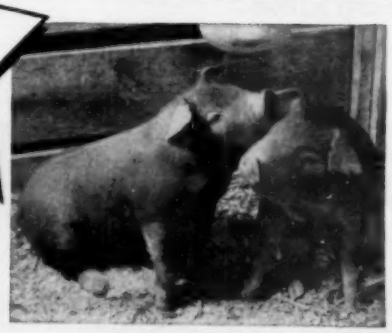
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in Granny's case. Do you think you can explain that to her?"

The lean boy swallowed hard. "I'll try. Gee, that's gonna make her feel much better, Mr. Brooks. I'm worried about my Granny. She's all I got and I love her very much. Sometimes, sometimes I'm afraid I'm gonna lose her, she gets so pale lookin' and tired."

"Well, Tommy," said Joe gently, "we all have to die sometime, and lots of us get worried when those we love get tired and thin. We just have to suffer along, that's all, after we've seen that they consult a doctor."

"Yes, I guess so," said the boy, a trace of tears in his eyes. "But Granny's been so good to me all these years. It seems a shame—" he broke off.

"Tommy," said Joe briskly, "do you have a little spare time now and then, after school or on Saturdays?"

"I will pretty soon," Tommy said. "The garden is harvested and I have time left. Why?"

Joe Brooks leaned back in his chair. "Well, we've got an awful lot of sweeping to do around this mill and store, and all of us are so busy waiting on farmers that somehow we never get a chance to do the job often enough. I like a clean store and I think customers do. I think they look around a clean store more than they do a messy store and they buy more in a clean store. I could use a boy around here one or two hours a day sweeping, dusting, cleaning counters and merchandise and doing odd jobs. I figure you could work off the $11.75 feed bill in a mighty short time."

The boy's eyes lighted eagerly. "Gee, Mr. Brooks, I'd love to try it. When do you want me to start?"

"Go home and talk it over with Granny," Joe said kindly. "Then come to work tomorrow or the next day, whenever you can make it. We'll work out a schedule."

"Gosh, I will," Tommy said quickly.

"And after you've got the feed bill worked off," Joe suggested, "if I see you've the makings of a good feed man, I'll have other jobs around here for you to do, errands, helping me with the monthly bulletin, turning the mimeograph, sorting sheets, stuffing envelopes. We're a busy bunch around here."

"I like to be busy," Tommy said happily. "Thanks, Mr. Brooks. You made me feel a lot better."

Joe smiled. "Tommy, what does Granny like to eat—something special?"

"Bon bons," Tommy replied quickly. "She's always tellin' me how many she ate when she was a girl. Once I bought her three at the Elite Candy Shop and she ate only half a bon bon every day to make 'em last."

Joe dug into his pocket. "Tommy, how about you and me going 50-50 on a little treat for Granny? Let's buy her a dollar's worth of bon bons, and you can get them at the Elite right now on your way home. That will be 50¢ for you and 50¢ for me. Guess we can stand it." Then seeing the momentary embarrassment in Tommy's eyes, Joe went on, "I'll pay for the bon bons right now, and we'll add your 50¢ to the $11.75 feed bill you are going to work off. How's that?"

Tommy Harrigan looked very relieved, and very happy. "Oh, gosh, that'll be wonderful, Mr. Brooks. When I tell Granny the good news, she just isn't gonna believe it. She isn't gonna believe it! Bon bons! I can see her gettin' excited right now."

### GORDON T. SHAW HONORED

SEATTLE — Gordon T. Shaw, a feed and grain industry leader on the West Coast, was honored by 25 friends Oct. 10 on the anniversary of his 41st year in business for himself. He has been in the feed and grain trade since 1914 and over the years he has served on national committees in the grain industry and for 25 years has served as president of the Seattle Grain Exchange.


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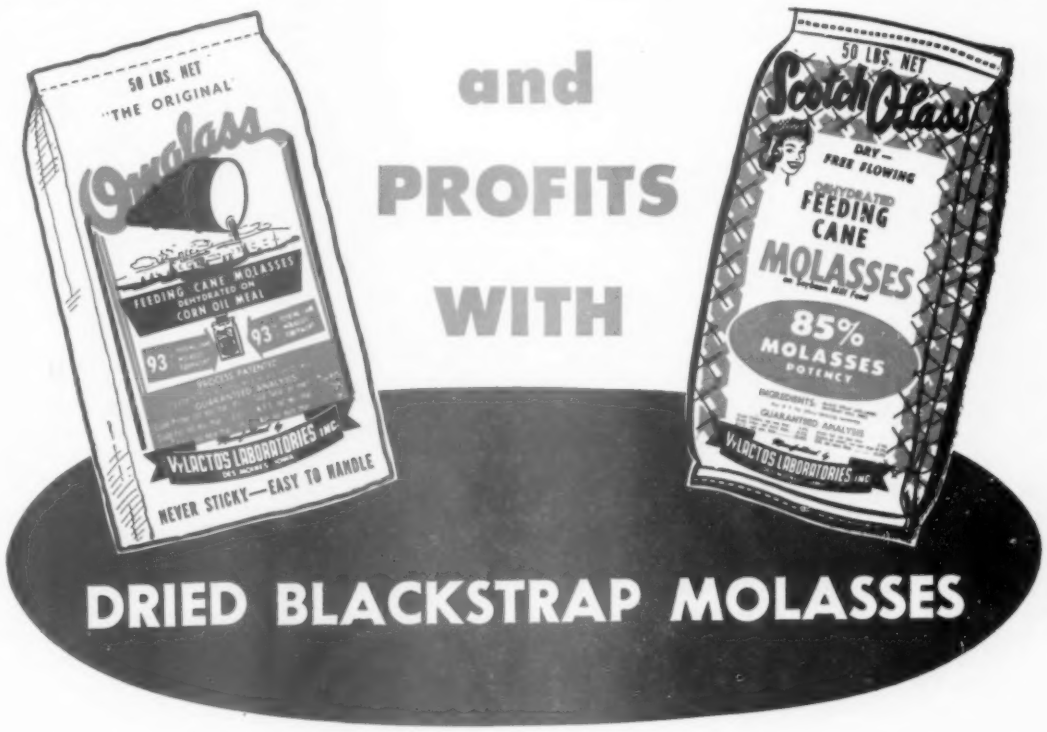


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# Around the World's Poultry Congress

## (Part II)

**By Sam Golden**

MEXICO CITY—So hard to realize that the scientists and growers, associated with poultry of 48 nations, attended the 11th World's Poultry Congress and now are returning to their native countries, enriched in knowledge, and happier for the occasion.

As the country chosen for the congress, Mexico and Mexico City opened its doors to receive the delegates from all parts of the world. As President Ruiz Cortines said in his address of welcome, "Today, I declare the work of the XI World Avicultural Congress inaugurated, and you have my sincerest wishes that this work be fruitful, very fruitful, not only for the nations who are represented here but for the entire world, and especially for Mexico. Mexico bases its existence and its future on the friendship of all the countries of the world."

These words were received with a thundering round of applause and the jam-packed delegates stood to honor the martial and stirring notes of the Mexican National Anthem.

### 1.5 Million Visitors

Over one and one half million people visited the combination of plenary sessions and 50 exhibits displayed at the Auditorio Nacionale during the seven days of the congress.

Starting with the U.S. feed folks who stopped to exchange greetings, or visited the various embassy socials and hotels. . . . Enjoyed a dinner with Bob Hogue, U.S. coordinator of American interests at the congress. Bob hails from Lafayette, Ind. . . . Arthur Woodin, export manager of John W. Eshelman & Sons, hard at work at the John W. Eshelman exhibit of Red Rose feeds. . . . Mr. and Mrs. Lloyd Hushman of Gordon Johnson Co., Kansas City, Mo. . . . Genuine surprise to shake hands with Mr. and Mrs. E. C. Wine of Rockingham Milling Co., Harrisonburg, Va. . . . Then a big hello to Franklin Perdue, prominent Delmarva broiler grower and feed manufacturer of Salisbury, Md. . . . Good friend from Philip R. Park Co., J. L. Sutherland, director of research. . . . And Hal McDaniel, S. A. Seley Co. of Los Angeles, Cal. . . . Nice chat with Webb N. Morrison, marketing consultant for Smith, Kline & French, of Philadelphia, Pa.

Dr. J. E. (Jake) Hunter, here with his wife and son, told me that 30 min. before he left for Mexico he received the promotion to vice president of Allied Mills. . . . Enjoyed a reunion with Floyd Gee, sales manager of Butler Chemical Co., Galena Park, Texas, here with his lovely wife. . . . Then along came Dr. Tom Jukes of American Cyanamid, who also was featured as principal speaker at the Mexican Veterinary Association Conference Sept. 30. . . . We saw Bill Wartens of Albumina Supply Co., New York. . . . Enjoyed a brief social at the Montenegro Club, Del Prado Hotel, with Ed Glennon, president of AFMA, and friend Tom Staley of Staley Milling Co. . . . Tom and I recalled our trip to Paris in 1951 at the IX Congress—some mighty fine memories. . . . Joining us with such memories was Jesse Jewell of Gainesville, Ga., who arrived here with George Van Giesen, Jesse Jewell's vice president and general manager.

### Exhibit Booths

During the exhibit hours I walked over to the Nopco booth and ran into vice presidents Hal Swanson and Mel Hockberg, nutritionist Jack Rovics, and export manager Joe Goldstein. . . . Took a photograph of Clarence Whitmoyer of Myerstown, Pa., and the vice president of Whitmoyer International, Harold W. Kauffman, attending the Whitmoyer display. . . . The Dawes Co. was well represented—greeted Charlie Dawes himself; his daughter and son-in-law, Mr. and Mrs. Sam Tepper; Dawes' nutritionist, Jimmy Fritz and wife, and Fred Wharton, also of Dawes. . . . Saw Dr. Nat Wernikoff with his wife attending the Vineland Poultry Laboratory booth. . . . At the Commercial Solvents display was I. Roy Cohen surrounded by C.S.C. Latin subsidiary "Commercial Solvents Mexico" ("Comsolmex") personnel and a beautiful senorita handing out literature. . . . Which reminds me that the Archer-Daniels-Midland (Api-Aba of Mexico) exhibit featured the lovely Archer girls—two senoritas with bows and arrows and dressed in form-fitting green Robin Hood costumes. . . . Visited the exhibits of the Pfizer Co. and American Cyanamid. . . . Met and enjoyed a visit with Madame Alexandria Danilova, professor of Poultry of the Veterinary Academy of Soviet Russia—a member of the six delegates of said country. She told me (in English) that the efforts of Russian technicians in poultry breeding have met with huge success. She mentioned two varieties—White Russian hen, and the Peruomaiskaia breed—with records of 250 eggs per hen per year! She also said that the women of Russia are in the forefront in the business of breeding and raising of poultry.

Back to visiting Americans . . . Doc. J. C. Baurinfiend of Hoffmann LaRoche, and his Latin American associate, Rudolf Anliker of Roche International, enjoying their visit to this congress. . . . The other night a cocktail party given by Jose Arriginagua, assistant purchasing agent of Api-Aba (Archer - Daniels - Midland). . . . At the party was Pete Wertz of Hoffman-Taff Co., Springfield, Ill. Pete had recovered from a very serious operation and all of us were glad to see him back with us again. At this party we were treated to a musical festival by the famous Mexican Mariachi bands. . . . Outside of the Del Prado Hotel one evening ran into T. C. Reinhard, Pennsylvania Farm Bureau Co-op. Assn. farm supplies division, Manheim, Pa. . . . Visited Swift & Co. display.

Mexican feed and poultry interests and most delegates of foreign countries were happy to meet and visit with Dr. Milt Scott, professor of nutrition and animal husbandry at Cornell University, and his wife, Dorothy, and with Dr. Russ Couch of Texas A&M, and his wife, Velma.

### New Mill Visited

In company with Milt and Russ we attended the inauguration of a new push-button Sprout-Waldron feed mill on Sept. 24, built by Malta, S.A., largest brewery of Mexico. It was attended by top-notch Mexican scientists, such as Dr. Oscar Valdes Ornelas, head of the veterinary department of the University of Mexico City, and prominent Mexican poultrymen. There was a luncheon served, and the press of a button on the electronic panel initiated the manufacture of the first ton of poultry feed. This was followed by trips through the entire mill and chemical laboratory. This modern feed manufacturing plant will have a capacity of 500 tons per day.

Ran into Mr. and Mrs. George H. Draper of Texas A&M. . . . Enjoyed visiting and resting at the Purina exhibit—saw J. D. Sykes, president of Ralston Purina, talking with Dr. Harold Wilcke of the Purina nutrition department.

Visited the feed mill of the Flagasa Feed Manufacturing Co. of Mexico City. It undoubtedly represents the most modern feed manufacturing plant in the world! I know this will cause a great deal of lifting of eyebrows among U.S. feed manufacturers, but this is the case. The mill will begin operation about the last week in October. The equipment is of Swiss make, completely automatic. While there I met Mr. Dave Martin and his wife. Dave is poultry department manager of the Pillsbury Co.

While visiting this plant I learned that Dr. Heino Naelapaa is director of the overseas feed division of Pillsbury Co. He is serving as advisory nutritionist to Flagasa on a six-month basis to get them started and set up with good formulas, quality control, etc. In the U.S., prior to his present position, he was assistant to Dr. Blasing of Pillsbury Co.

We were given a deluxe tour of the mill by Sr. Marcos Ortiz, Jr., sales manager, a native Mexican who graduated from the University of Missouri and California Tech. His father is the president of this mill and the biggest flour manufacturer in Mexico.

This Flagasa feed mill represents $1 million investment; top tonnage capacity is only 250 tons per day. This information resulted in some questions as to the economics of this high-priced plant producing only 250 tons per day. Mr. Ortiz explained that the equipment would produce the highest quality feed irrespective of tonnage.

### Embassy Party

The same evening at the Auditorio Nacionale we attended a cocktail and buffet under auspices of the American Embassy. The receiving line was headed by William (Bill) G. Lodwick, agricultural attache for the U.S. in Mexico. Bill was formerly associated with the U.S. feed industry. Over 1500 people attended the Embassy social, which featured broiler "chicken in basket," with baskets as gifts, native Mexican dances and U.S. singing teams. I enjoyed reunions with foreign delegates whom I met in 1951 in Paris and again in 1954 in Edinburgh, especially Mr. Islam, director of agriculture at Pakistan, and Mr. W. Groenveldt and wife, Director of "Provimi" Products of Rotterdam. Mr. Groenveldt's son, Aat, is employed by Stabilized Vitamins, Inc., of Garfield, N.J.

Enjoyed a visit and long conversation with Dr. Ed Hoffman of Unity Feed Mills, Boston, Mass. Ed described to me his experiences while working as a consultant for the Spanish government to the feed industry of Spain. Greeted Mr. Paul DeFarkas, export manager of Commercial Solvents Corp. and vice president Mr. Wheeler, of the same company. . . . Was invited and attended a dinner deluxe given by Adolph Rosenberg and his son, Ralph, of Stabilized Vitamins. . . . Was greeted by Dr. James McGinnis of Washington State University. He is in Mexico for an extended period (6 months) with his

*EDITOR'S NOTE: Scientific discussions and other aspects of the recent 11th World's Poultry Congress in Mexico City have been covered previously in Feedstuffs (Oct. 11, page 1). Sam Golden of the Amburgo Co., Inc., Philadelphia, reported the first installment of some of his observations on sidelights of the congress in Feedstuffs Sept. 27, page 7. This report concentrates on his meetings with Americans and some foreign representatives at the congress, as well as a few highlights of Mexico's progress in the feed manufacturing field, and in poultry and egg production. In a future article he will describe the progress with poultry production and manufacturing of formula feed being made by other Latin American countries, as well as European and Asiatic countries.*

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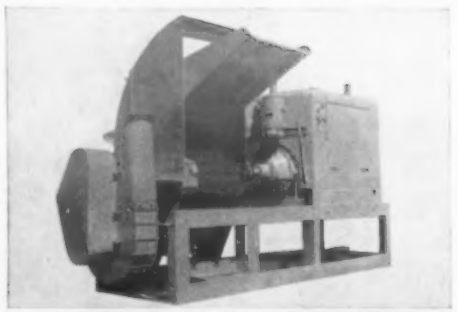

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wife Eleanor and daughter, working with the Rockefeller Foundation, helping with the Mexican poultry development program.

Back at the Amburgo booth . . . Greeted the large integrated feed manufacturer, Oscar Diaz of Granja Horizante, Habana, Cuba. . . . Then a big hello to Dr. Hollis Brower of Dow Chemical. . . . Dr. and Mrs. C. Shaffner of University of Maryland. . . . Dr. and Mrs. Rollin H. Thayer, poultry science department of Oklahoma State College. . . . Mr. and Mrs. Mike Pack of Lakehurst, N.J. . . . Dr. and Mrs. Robert Ringer, poultry department of Michigan State University.

On Sept. 27, I had the honor of presenting a paper to the congress in session on the subject "Zinc and its relationship to poultry nutrition," on behalf of Commercial Solvents Corp. This paper was prepared by: Dr. Joseph M. Pensack, Dr. P. D. Bogdonoff, Dr. J. N. Henson, and Dr. R. C. Klussendorf, all of the Commercial Solvents research department at Terre Haute, Ind. The authors were unable to attend and since the paper was written in English, I was asked to present it.

After the reading, I enjoyed a visit with Dr. Bird of the University of Wisconsin, who also had attended the 1951 congress at Paris and the 1954 congress at Edinburgh. His paper which he presented was well received.

The same evening, in company with I. Roy Cohen of Commercial Solvents, I enjoyed a social sponsored by the Canadian Embassy. At the Embassy I saw Dr. and Mrs. Hugh Branion, department of nutrition, Ontario Agricultural College, Guelph; Prof. J. R. Covers and Dr. S. J. Slinger, department of poultry husbandry, also of Guelph; Dr. A. E. and Mrs. Ferguson, Ontario Veterinary College, Guelph; Prof. and Mrs. G. Hodgson, department of poultry husbandry, University of Manitoba, Winnipeg; Dr. D. R. Clandinin and Dr. A. R. Robblee, division of poultry, University of Alberta, Edmonton, and Mr. Roy Patterson, prominent Canadian turkey breeder of Cambachie, Ontario, and his wife.

### Israel Egg Production

Finally, a long visit at the informative Israeli exhibit, with Dr. M. Perek, head of the department of animal hygiene and poultry husbandry, Faculty of Agriculture, Rehovot, Israel, and Dr. Z. Ben-Adam, head of poultry, Ministry of Agriculture, State Poultry Experiment Station, Acre, Israel. From them I learned that Israel has now become an export nation of eggs. This information was amazing to me because during my visits to Israel in 1951 and 1954, I could not help but note the emphasis that this country placed on the production of poultry products because of a lack of meat coming into the country, and I did not believe they would progress so fast that they would become an egg exporting nation.

As a matter of most impressive interest, in just three short years, Mexico has been able to eliminate imports of eggs and chicks.

Some 1,600 delegates from 48 countries attended the seven-day congress, joining in discussions of their common problems. This is the first time such an event has been held outside the European continent.

Mexico Agriculture Secretary Gilberto Flores Munoz said that in 1952, Mexico had 46 million barnyard fowl and a daily production of eight million eggs. This obligated the government to import as much as 190 million pesos (one peso equals 8¢) worth of eggs and chicks a year to satisfy domestic demands. Today there are 96 million fowl, and production has reached 29 million eggs a day. Monetary value of this production is 4,272 million pesos a year, as compared to 1,168 million in 1952. The notable development of the poultry industry has been accomplished during a three-year program now being concluded.

Mexico, Secretary Flores Munoz said, does not now import a single case of eggs, and only buys abroad special breeding fowl. He said incubators throughout the country are now producing four million chicks a month. The Agriculture Secretary also praised the work and progress of Mexican feed manufacturing companies and organizations developing animal health products.

I enjoyed meeting President Ruiz Cortines of Mexico, on the occasion of the grand opening of the Congress when he passed by the Amburgo booth. We shook hands and I presented him with a brochure of our company. He was generous with his compliments of U.S. contributions to Mexico aviculture.


SW Data Sheet

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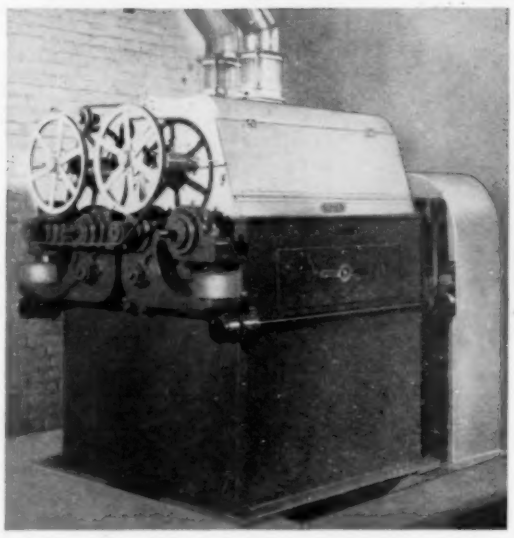

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| 9 x 24 | 10 | 900 | 180-200 |
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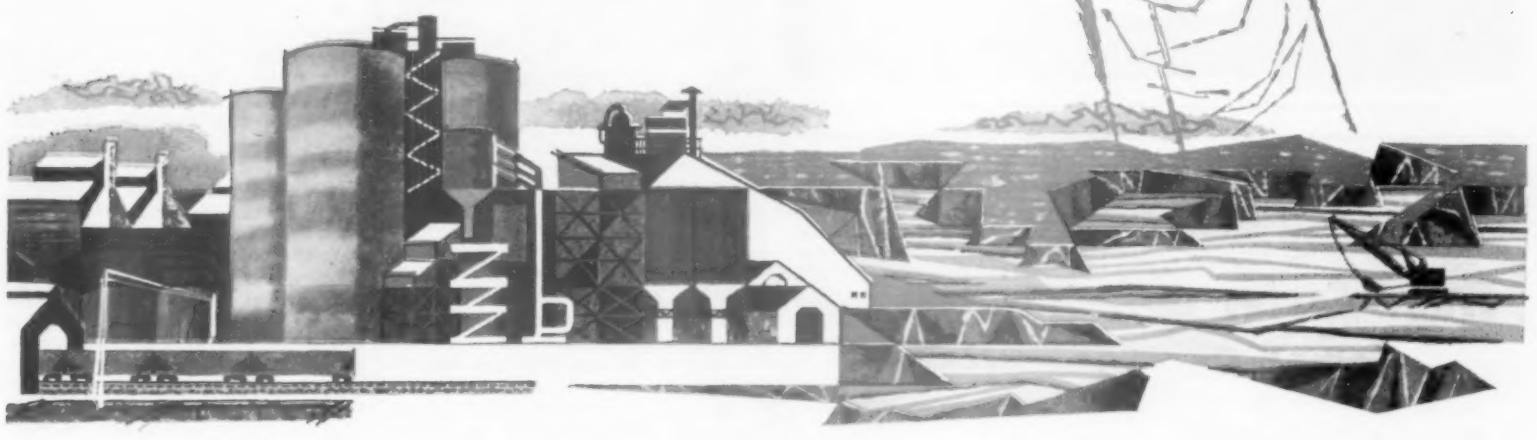

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# Variety of Industry Problems Covered at Texas Conference

By THOMAS E. LETCH
Feedstuffs Staff

COLLEGE STATION, TEXAS — The program for the Texas Nutrition Conference embraced a variety of topics which the feed industry is concerned with today. In addition to the latest information and scientific data on feeding poultry and livestock, there were talks on management practices, on the expansion of integrated swine-raising programs, on the development of and experiments with feed additives, and on the storage of grain.

Speakers were from colleges, from industry's scientific laboratories and from the feed manufacturer executive level.

Nearly 300 persons registered for the conference held Oct. 8-10 on the campus of Texas A&M College, according to Dr. J. Russell Couch, department of poultry science, chairman of the conference.

In a report from the Texas Feed Manufacturers Assn., co-sponsor of the conference, W. D. Nusbaum, Ralston Purina Co., Ft. Worth, president of the association, told of the progress being made with the merger of the feed manufacturers' group with the Texas Grain & Feed Dealers Assn.

A charter has been drawn up, with the combined group to call itself the Texas Grain & Feed Assn. A constitution and by-laws are expected to be ready by the time of the April convention when the final arrangements will be voted on by both groups.

Current plans call for three divisions in the association, Mr. Nusbaum said. These will be the feed, the retail and the grain handlers divisions.

Among the points of technical information presented at the conference were the following:

● The use of 12.5% added fat for breeding turkey rations has been found economical, and even higher fat rations are seen as likely.

● Reserpine has shown mixed effects on chick growth rates, and little if any effect on egg production.

● The energy level of a broiler ration is a greater index of the feed's efficiency than are the protein level or the cvalorie-to-protein ratio.

● There are indications that the use of feed restriction in the growing of broiler strain pullets for breeding is advisable and economical.

● Molybdenum and selenium have been shown to be essential in poultry nutrition, and it is probable other trace elements will be found essential as more knowledge is gained.

● Continuous feeding of hygromycin for poultry has had varying degrees of success as an anthelmintic.

● Feed manufacturers should use amino acid knowledge in formulation.

● Antibiotics are good insurance for maintaining high egg production.

● Ration formulation for ruminants is far from being as refined as for swine and poultry.

● The addition of unidentified growth factors to rations is good insurance.

● There is a need for uniformity in poultry management recommendations.

● Controlled feeding of a high energy diet to heavy-type laying hens has reduced mortality, controlled body weight gains and maintained egg production.

● Terephthalic acid and other compounds have been used successfully to increase the antibiotic blood levels in poultry.

Following are summaries of some of the papers presented. (More will appear in a subsequent issue of Feedstuffs.)

**OBSERVATIONS ON PROTEIN AND ENERGY RELATIONSHIPS FOR BROILERS—Dr. L. D. Matterson, University of Connecticut:** Experiments were set up to determine whether the energy content of a ration or the calorie-protein ratio of the ration has the greater influence in determining the growth rate, feed efficiency and energy composition of the carcass in normal practice.

In iso-caloric rations with increasing protein content (decreasing C/P ratios) the growth rate improves. The increase in weight is more marked in the experiment with increasing protein levels at constant C/P ratios because of the increased increments of energy. It was found that the protein level has relatively little significance in influencing growth or feed efficiency compared with energy


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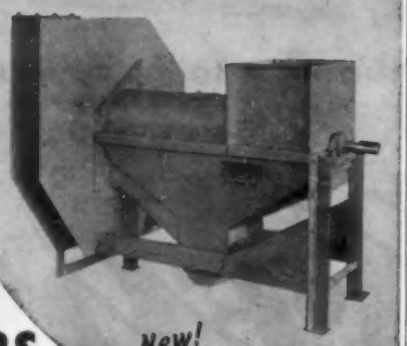


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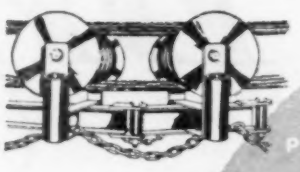

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levels. As productive energy increases at any given protein level (increasing C/P ratios), the gain to feed ratio increases.

In carcass composition studies it was found that, as with growth and feed efficiency, there is a much higher degree of correlation with the energy level of the diet than with the C/P ratio.

**SOME EFFECTS OF RESERPINE ON GROWTH AND REPRODUCTION—Dr. C. W. Carlson, South Dakota State College:** Three chick growth studies and one life cycle experiment with egg-type pullets in which reserpine supplements were used in the diet were conducted. On the basis of findings, indications were that there is a possible breed difference in the response to reserpine. Also considered possible is that dietary factors had some effect in how growth rate was influenced.

No differences in activity, calmness or excitability could be detected.

Reserpine at 2 mg. per pound of diet had little effect upon chick growth. With higher protein and energy-type diets, where growth was most rapid, it appeared to stimulate growth. However, where growth was poorer with a lower energy and lower protein diet, reserpine depressed the growth rate. No evidence of any great effect upon egg production has been obtained.

It is possible that under stress conditions reserpine will be of more value. Various levels of reserpine need to be considered, and further work needs to be done since we have only scratched the surface.

**TRACE MINERALS AND POULTRY NUTRITION—Dr. J. R. Couch, Texas A&M College:** With the renewed interest in the role of trace elements in poultry nutrition, molybdenum and selenium have been shown to be essential: molybdenum for the growth of chicks fed purified type diets and under certain conditions in practical rations, and selenium for the prevention of a type of vitamin E deficiency called exudative diathesis.

In recent years, a number of interesting relationships have been developed. The relationship between calcium and zinc in swine has led to its investigation in poultry nutrition. Of course, the inner-relationship of iron and copper in hemoglobin formation has been known for some time; more recently excessive intakes of molybdenum and zinc have been shown to cause a copper deficiency. Tungsten and sulfate have both been involved in the metabolism of molybdenum in both the rat and chick. Quite probably, as work in trace elements progresses, a number of other relationships will be demonstrated.

**FORMULATION OF FEEDS FOR BEEF CATTLE—Dr. H. O. Kunkel, Texas A&M College:** The formulation of rations for ruminants has far from reached the point of refinement of today's formulations for poultry and swine. The beef cattle nutritionist today devises rations based largely on principles discovered 20-30 years ago and, as a result, today's rations are not much better than they were then. Yet findings of the effects of hormone-like drugs and antibiotics show the way to superior formulations for beef cattle.

Basic to formulations for beef cattle is consideration of the following factors:

1. Beef animal production is largely geared to the utilization of the fibrous vegetative parts of plants.

2. The most efficient conversion of feed is carried out by the young animal so that creep feed requires specific considerations in feed formulations.

3. Swine and poultry can convert concentrates to meat products more efficiently than can beef cattle. Thus, maximum possible efficiency in utilizing available feeds must be sought.

4. The microorganisms in the rumen and reticulum form a massive mediating mechanism on the nutritional requirements of the beef animal and on the animal's ability to utilize a ration.

5. Feed formulation and management must go hand-in-hand to maintain the beef animal as a healthy, efficiently producing animal unit.

The ideal range or pasture supplement should provide all of the energy, protein, minerals and vitamins which are not supplied by the forage and yet to be consumed by the animal in only such quantities as are needed.

It must be available to all animals which require the supplement. It should be a carrier for such additives that we see fit to include. It should not be toxic or unsafe to feed in any quantities that might be consumed by the animal.

It would seem that a self-fed, self-controlling mixture of which livestock will tend to eat less with improving quality of pasture or range is highly desirable. Pointing the way are the results obtained with the salt-cottonseed meal mixtures, and the phosphoric acid containing urea-molasses mixtures.

### Winter Cattle Ration

Wintering cattle should receive 2½ lb. of good quality forage (90% dry matter basis) per 100 lb. of body weight. The supplement for each grazing animal should provide at least .8 lb. supplemental protein. An additional .4 lb. protein should be in the roughage. The supplement should provide the following nutrients per animal per day: 40,000 I.U. of vitamin A or 75 mg. carotene, 0.06 lb. phosphorus, .06 lb. calcium (in areas where required), .12 lb. iodized NaCl and 1 mg. cobalt. If trace minerals are to be added "just in case," trace mineralized salt, bone meal, alfalfa leaf meal and molasses are all sources of the trace minerals.

Added corn, milo, oats or other grain, or molasses can and often should be provided in the supplement during the latter part of pregnancy, during calving season and for 2-3 months thereafter. Nursing cows should receive per day an additional .8-1 lb. protein, 160,000 I.U. vitamin A or 325 mg. carotene and .07 lb. each of phosphorus and calcium.

Special supplements under certain conditions are required.

With wintering feeds, hay or silage are used in place of the pasture and the same principles are applied.

### Creep Feeds Requirements

The major requirement in creep feeds is a source of readily available carbohydrate. Protein is generally required only in feeding the 5-8 month old calf. A good creep feed meeting most requirements during the entire suckling period can be formulated per ton as follows: ground or cracked milo or corn, 1,000 lb.; oats, 600 lb.; cottonseed meal or soybean oil meal, 200 lb.; molasses, 200 lb., and tetracycline antibiotic, 60-100 gm. Ordinarily, additional mineral and vitamin supplementation is not necessary.

The fattening ration, like creep feeds, is largely a matter of providing energy TDN or digestible calories. However, successful rations do not generally contain more than 65% TDN.

The total mixed feed, often pelleted and self-fed, is becoming the primary type of ration fed to feedlot cattle. The mixing of roughage with concentrate results in less danger of digestive disorders. Fine grinding and pelleting tend to improve feed consumption, particularly of roughages of less quality, and to increase the


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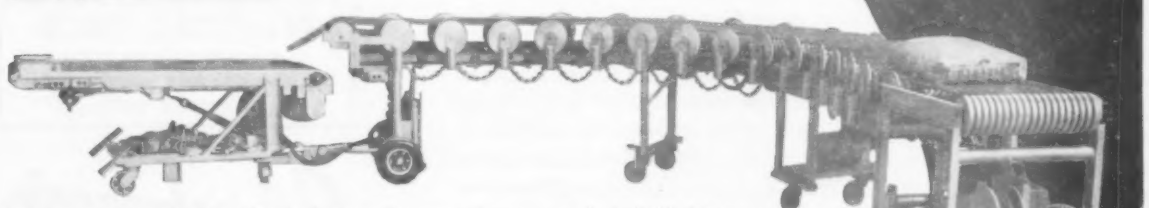

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efficiency with which animals utilize the feed.

A total feed mixture for calves should contain 15% protein; for yearlings, 12% protein, and for two-year-olds 8% protein.

Feed additives for fattening or growing cattle in the feedlot should include per ton: 24 million I.U. vitamin A or 48,000 mg. carotene; 20 lb. of bone meal, dicalcium phosphate or disodium phosphate; 20 lb. of salt (60 lb. if urinary calculi may be a problem), and 7.5 gm. of a tetracycline antibiotic. Diethylstilbestrol should be either implanted (in steers) at a level of 36 mg., or fed to cattle being fattened for slaughter only at a rate of 10 mg. per animal per day. Feeding a slightly higher protein level to stilbestrol-fed animals may be desirable.

**THE EFFECT OF DIETARY INTAKE ON GROWTH, "SEXUAL DEVELOPMENT," EGG SIZE AND EGG PRODUCTION OF BROILER STRAIN REPLACEMENT PULLETS —Dr. B. L. Reid, Texas A&M College:** Work has been concerned with the study of the effect of feed restriction on the developing pullet, and with an evaluation of different methods of feed restriction. Feed restriction may be accomplished by a number of methods: (1) limiting the total amount of feed allowed the birds, or the time the birds have access to the feed; (2) feeding a low energy grain source with mash in order to limit the nutrient intake, and (3) the feeding of a bulky type diet which the birds are unable to consume in adequate amounts to meet energy requirements for rapid growth and early sexual development. Most of the work was done with the latter method, using oat hulls and rice hulls as the crude fiber.

The results of these studies, although by no means conclusive, indicate that the use of feed restriction in the growing of broiler strain pullets is both advisable and economical. Of the methods studied, the restriction of the total amount of a good feed fed the birds results in a considerable saving in feed costs of rearing the birds to sexual maturity. In diets where the total amount of feed fed to the birds is reduced, the amount of vitamins, minerals and medication should be increased to the extent of the restriction. Conversely, in diets containing high fiber levels of which the birds would be expected to consume in larger amount, the amounts of vitamins, minerals and medication may be reduced, if fed ad libitum, by the expected over-consumption.

The use of high fiber diets will result in delayed sexual maturity and lower body weights at housing. However, at the end of two or three months in the laying house all the birds will weigh the same.

A beneficial effect of feed restriction on egg size has been obtained in two studies with birds hatched in December and March; however, the results of the study with October hatched pullets showed no effect from feed restriction on the percentage of hatching eggs obtained.

The use of a growing ration containing 15-20% crude fiber and 13% protein in the rearing of pullets, due to the added feed intake, can be economical only if there is a saving in the cost of labor and management involved in the feeding, or the feed cost is sufficiently reduced.

The high fiber diets which have been employed in these studies have all been pelleted. It would seem more desirable to use a mash which would tend to further reduce the amount of feed the birds are able to consume.


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**FOR SALE—COMPLETE SMALL PROC**essing plant, with the following: One Polar Aluminum Freezer, No. 1810 with 3 H.P. ref. unit, 10 ft. x 18 ft. x 8 ft.; one Reel-O-Matic Scalder; one Flash Picker; one Pinning Wheel; one Eviscerating Pan for P.W., galvanized; one Standard Drawing Table, 88 large size; three E Z Roll Chill Tanks. Would trade for most anything. This equipment bought new in 1952. Contact V. W. Stebbins, Gothenburg, Neb.; Phone JE 73631.

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# Educator Calls for Free Researchers, And Faith in Them

MADISON, WIS.—Many of Wisconsin's greatest research achievements were possible because no one tried to draw a sharp line between "practical" and "basic" problems, Dr. C. A. Elvehjem, president of the University of Wisconsin, told staff members of the university's agricultural experiment station recently.

Research that at first seemed to be theoretical has frequently brought unexpected benefits to agriculture and to the public, he said at a dinner marking the 75th anniversary of the station.

Even more often, studies aimed at solving practical farm problems have opened up whole new areas of basic science, he explained. Dr. Elvehjem, formerly head of the department of biochemistry at Wisconsin and a member of the board of directors of Ralston Purina Co. until he became president of the university, cited some examples of practical farm studies that opened new areas of basic science.

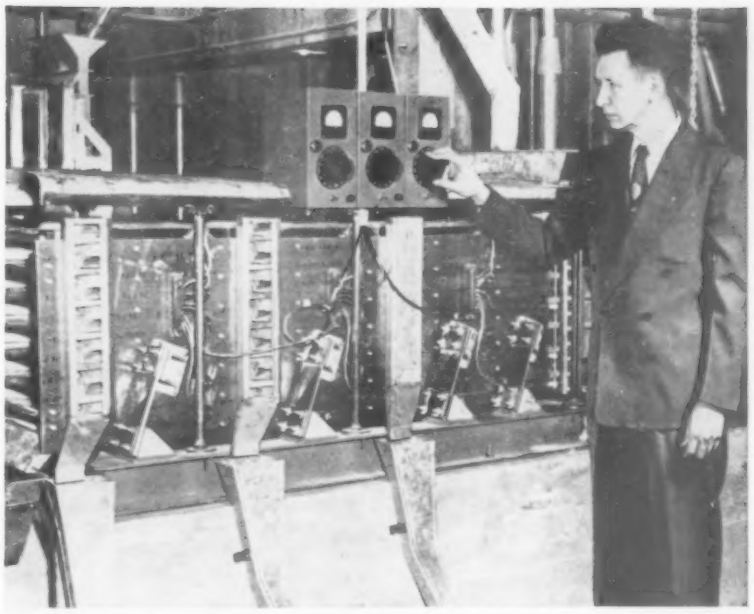
Wisconsin's pioneer work in iodine deficiency in swine was one example. Studies began in the early 1920's when hog breeders were having trouble with spring pigs which were born hairless and soon died. Wisconsin workers showed that symptoms were due to a vitamin deficiency.

This led to recognition of a "goiter belt" across the northern U.S. and Canada in which soils and crops were very low in iodine. The findings solved the hog breeder's problem and also some urgent problems of human health, Dr. Elvehjem pointed out.

He also noted the discovery of vitamin D and its use to prevent rickets in children were certainly brought about more rapidly because poultry raisers reported leg weakness in chicks raised indoors during the winter months. An ailment in pigs which came to be known as "thumps" also brought findings of importance to man and ideas useful to basic science. Wisconsin workers demonstrated that iron salts were effective against thumps and anemia in children only when small amounts of copper were also added.

Dr. Elvehjem pointed out that research "needs men who have imagination, but these men must be given the freedom to take whatever path seems most logical at the time of decision."

He added, "We need administrators who have faith in these research workers and give their effort to providing the freedom and proper environment for experimental work."



**NEW SEPARATING DEVICE — William Brastad, central research laboratories, General Mills, Inc., Minneapolis, reaches for a dial to apply current to the company's "E-Machine," new electrostatic separating device. Developed originally to separate flour-bearing particles from bran in milling, the machine—believed to be the first really successful electrostatic separating device for flour milling stocks—may find use in mining, the seed business, and other diverse fields. In this commercial-sized version of the machine, seven decks perform electrostatic separation of particles simultaneously.**

# *New Electrostatic Machine For Separation Developed*

MINNEAPOLIS — Development of what is believed to be the first successful electrostatic device for separating flour milling stocks has been announced by General Mills, Inc. The device—designated the "E-Machine"—has been developed by L. F. Borchardt and William A. Brastad of the company's central research laboratories.

The machine can take a mixture of salt and pepper and quickly separate it into two quantities of pure material, but it is designed for more serious business than the salt-pepper problem, Mr. Brastad said. Its principal purpose in the milling business, he pointed out, would be to separate pure wheat flour from bran.

However, the ability of the E-Machine to separate particles on relatively slight electrical differences has caused such diversified interests as mining companies and seed firms to become very interested in it, too. Potential use of the new device may reach into many fields, it is believed. In other tests, the E-Machine isolates metallic aluminum from aluminum oxide. It separates particles of titanium minerals from sand.

Mr. Brastad, section leader of the applied physics section at the laboratories, has been most closely associated with the E-Machine during its 11-year development period.

"Originally, we were trying to improve the electrostatic separation process used with some success in the mineral field," Mr. Brastad said. "Our aim was to perform the more difficult separation of bran from flour-bearing particles in wheat milling. Existing machines wouldn't do the job so we tried some new ideas. The E-Machine is the result."

"The E-Machine seems to have good potential as a tool in some ore separation processes," Mr. Borchardt said. "It would probably not be practical on a low-cost mineral, such as taconite, but it has opened speculation in other areas."

Mr. Borchardt, director of the physical research activity at the central research laboratories, said that the new device has proved in tests that it will recover valuable grains of pure minerals from beach sands. Wilframite, ilmenite, rutile and zircon have been separated from silica and other minerals.

The new device has shown that it will isolate healthy seeds from inferior and foreign seeds of the same size.

### Operation Described

In operation, the E-Machine takes advantage of the differences in electrical properties of the particles to be separated. As the mixed particles are fed into the machine, they move along a conducting deck which is maintained at ground potential, electrically. Above, metal troughs or channels are maintained at a relatively high D.C. potential.

As it moves along, each particle accepts an electrostatic charge of polarity and magnitude corresponding to its own electrical characteristics. If it accepts enough charge of polarity opposite to that of the upper electrode, it bounds upward into the troughs. If not, it either remains on the lower deck or rises only part way and falls back.

One unique feature of the machine is the prolonged opportunity it gives each particle to acquire its characteristic charge. Another is the precise separations possible, based on the opposition of electrostatic and gravitational forces.

"Versatility of the E-Machine is high," Mr. Brastad said. "Voltage and polarity of the electrode can be adjusted to suit the job to be done. The device can be tuned to isolate first one type of particle, then another." GMI, now able to make a precise electrostatic separation of bran from flour-rich particles, believes the E-Machine has too much general potential to be restricted to milling, he added. Separation problems in many fields are now being sought.

**SINGLE DECK MODEL — A single-deck model of the E-Machine, utilizing electrostatic principles and mechanical design features in unique combinations, performs precision tests in laboratory. Here Mr. Brastad, section leader for applied physics at the laboratories, isolates bran from other wheat components (note charged-up particles flying upward from the lower tray). Commercial capacity in the E-Machine is obtained merely by increasing the length and width and by stacking decks one above another.**

## Soapstock Used As Fat Source In Cattle Ration

FRESNO, CAL.—Hydrolyzed vegetable oil, a byproduct of cotton oil milling, and MC-47, a byproduct from the manufacture of monosodium glutamate, make up 12% of the volume and 2% of actual fat in a ration being fed in a cattle feedlot here.

Fifteen thousand steers yearly are fattening on the waste product of the Producers Cotton Oil Mill. It has been used in increasing amounts since 1955 when the mill had 1,800 tons of soapstock which had become valueless when the soap market demand dried up.

The story of how the ration was developed was told in a recent issue of The Cotton Gin and Oil Mill Press, a magazine for the cotton ginning and oilseed processing industries.

At the time the mill was losing its soap market, feedlot operators in the area were seeking a cheap year-around source of fat. Mill officials saw a possibility in their soapstock. The mill uses a soda ash refinery, while most mills use caustic lye. This eliminated the need for expensive reprocessing.

Alkalinity of the hydrolyzed vegetable oil had its disadvantages, however. It could burn up much of the protein in the ration, the product was nearly impossible to pour and it was not palatable.

Will Frech, chemist for Producers, added MC-47 to the soapstock. A slightly salty, syrup-like secondary byproduct of the sugar beet industry, MC-47 had been used as a feed additive by Producers for several years. It is a leftover from the manufacture of monosodium glutamate, the food seasoning.

After blending, the mix flowed easily, had a more agreeable odor, and it was almost neutral in its acid-base balance. Tests showed the mixture could supply up to 4% of the feed formula's total fat content.

The converted soapstock is now piped to the Producers feed mixing mill where it is measured into the ration as 12% of the ration's volume and about 2% of the actual total fat. Other ingredients are 10% meal, 24.25% cottonseed hulls, 3% dehydrated alfalfa, 50% barley and .75% minerals.

The report on the development said cattlemen are getting a year-around supply of fat at 1¢ lb., and the mill is converting some 300,000 lb. of soapstock annually into beef.

## New Bulk Station

HARRISONBURG, VA.—Southern States Cooperative has begun construction of a new retail store in Harrisonburg. The 75 by 200-ft. store will handle nothing but feeds and will contain grinding and mixing facilities. Near the store, a 320-ton capacity bulk feed station was placed in operation recently. The station has 22 stainless steel bins, 12 of 10-ton capacity and 10 of 20-ton capacity. Feed is dumped by gravity into bulk trucks. The station serves an area within a radius of 75 miles.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Oil soluble vitamin protector and pigmentation aid.
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For better poultry pigmentation.
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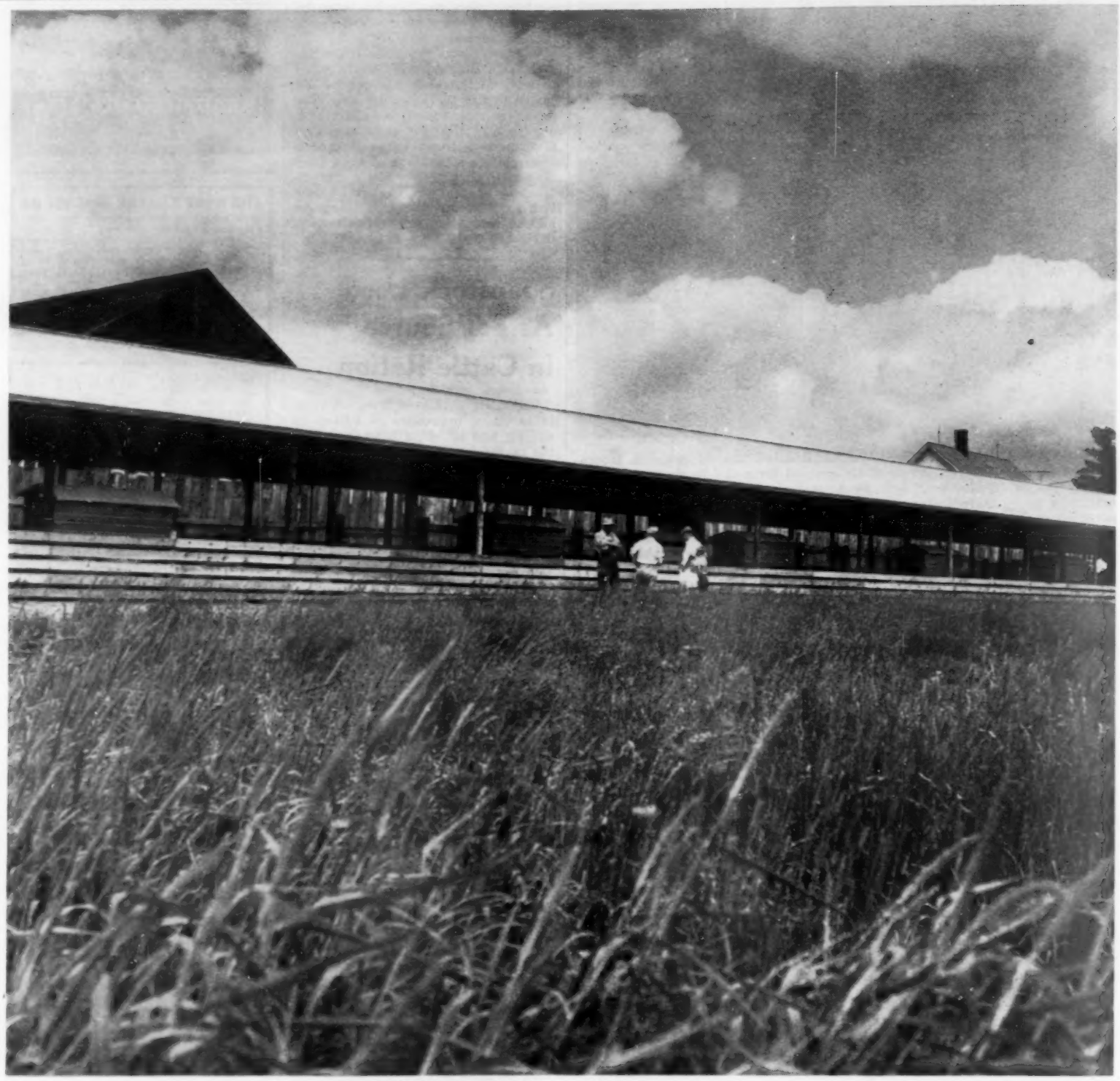

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If that is an exaggeration, it's a slight one. Farming is marching forward more rapidly than any major industry. To serve an agriculture that has new ways to raise poultry and livestock, feed dealers must keep in step with changing times.

Purina keeps an experienced eye on new practices in agriculture and sorts the practical from the fads. Purina Research tests new methods and develops products for best performance under changed conditions.

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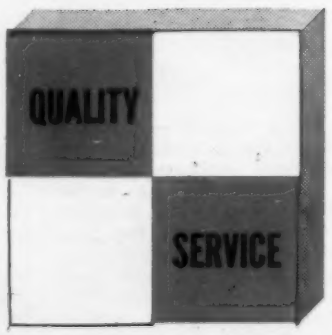


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## STUDIES

(Continued from page 4)

terials. Later fractionation studies were made, and these were discussed at the AOAC meeting.

It was noted in feeding tests that the toxic effect was found in the unsaponifiable portion of the original fat. Mr. Brew went on to tell of research on concentrating and isolating the factor by chromatographic means. He said it appears that levels of less than 2 ppm of the chromatographic concentrate in the diet would be readily detectable.

**Possible Nature of Material**

The paper presented by Mr. Brew concluded: "We believe it highly probable that the toxic type of compound with which we are dealing is a product of cholesterol alteration either to a single hydrocarbon or a group of hydrocarbons with activity possibly extending to some of the oxidized forms of the hydrocarbons. This belief is based on: First, the readily available supply of cholesterol as a starting material; second, the knowledge of the effect of high temperature upon cholesterol; third, the molecular weights of the more potent concentrates are consistent with a molecule similar to cholesterol in dimensions; and finally, the close association of substantial amounts of cholestadiene with fats of high activity.

"If the major constituent of the toxic concentrates, found by mass spectrographic data to have a molecular weight of 366, is assumed to be the toxic compound, one might suspect a cholestatriene isomer, possibly with an aromatic ring.

"The final identification of the toxic type of compound may present some difficult problems."

Dr. Friedman, explaining the background on the edema disease problem, said that a tarry by-product had been mixed into fat at 40%. It is a fatty acid material. The toxic factor is in the unsaponifiable portion of the fat by-product.

He also pointed out that symptoms of the edema disease have been observed when birds were fed material from carcasses of chickens which had the condition, indicating a toxic factor was in the flesh of chickens fed the disease-producing material.

Dr. Friedman said the toxic factor is not a product of one manufacturer.

Dr. Wootton also told of chemical research on the disease factor and outlined various characteristics of the factor. He presented possible chemical structures of the disease-producing hydrocarbons.

He noted that the principal has been obtained in concentrated form. He said it has a high molecular weight and appears to be a polycyclic hydrocarbon containing at least one aromatic ring.

## G. L. F.

(Continued from page 1)

tegration in ways that will preserve their independence," Mr. Fallon said.

**Poultry Plans**

More than 90% of all broilers produced in the U.S. are grown under contract, he continued. In keeping abreast of changes, G.L.F. has been experimenting on a small scale with broiler contracting, he said, and has developed a contract that is setting the pattern for the industry in G.L.F territory—New York State, New Jersey and 17 northern Pennsylvania counties.

He disclosed that G.L.F. plans to operate a small poultry processing plant in western New York, as a pilot plant in marketing of broilers, turkeys and caponettes.

Another project announced at the meeting is aimed at developing a system whereby one man, working five hours a day, can handle 10,000 laying hens. This project is designed to halt the decline in the number of layers on farms in G.L.F. territory, which has dropped 26% since 1955, Mr. Fallon said.

Mr. Corwith revealed a move to meet change through the reorganization of G.L.F. retail stores in heavy urban areas. Two stores have been organized as G.L.F. subsidiaries. Their main source of income is from lawn and garden items. The reorganization, Mr. Corwith said, permits service to the few farmers left in those areas. Earnings the stores realize from urban trade can be used for the benefit of all members.

After the first of the year, Mr. Fallon announced, G.L.F. will make available to members group health and accident, and group life insurance, "tailored to farmers' needs."

Stockholders learned from a printed report that G.L.F. ended its fiscal year last June 30 with net profit of nearly $5 million, about $800,000 less than the year before. Lower net profit was "due primarily to the lack of favorable market conditions which occurred in 1956-57," according to the report.

Total dollar volume for the entire G.L.F. system, including manufacturing plants, warehouses and retail stores, was nearly $308,500,000, a slight increase over the previous year and third high in G.L.F.'s 38-year history.

The figure includes $113,227,000 in retail stores, $169,300,000 in wholesale, and a record high $25,867,000 in petroleum bulk plants.

## COTTONSEED

(Continued from page 1)

USDA had not expected to take over any cottonseed oil under this program.

It has been broadly misunderstood through comment attributed to CSS officials that CSS would not implement this program under any fixed margin for oil if the program was to go into effect.

Under this program, USDA will not assume any fixed margin for oil from a cottonseed crush where the producer has been paid for upland cotton the support price of $41 per ton, except to the extent that the persons owning the seed may retain the residual products of meal, lint and hulls and offer the oil to CCC on the basis of acceptance on the lowest offer basis.

There is no commitment to fix a crushing margin for the operator.

USDA is now prepared to take over oil offered on this lowest tender basis henceforth — particularly in the Southwest where the cottonseed price has broken so badly.

**Oil Donation Program**

It is strange that this market break occurred about the time when it was widely known that the USDA had rejected the oil donation program for domestic and foreign aid. Many felt that this rejection of the oil donation program might have been a supporting factor for all protein meal products.

It appears that the market place saw things differently and has assumed that there is more oil on the market than can be absorbed domestically, for export or for donation. Market action after the oil donation decision must be charged with the action in Texas where the cottonseed price broke so disastrously.

Activation of the cottonseed program, wherein CCC obtains oil for its account, suggests that the previously killed oil donation program for domestic and foreign aid may be reinstated. This is at best a conjecture.

Top USDA officials say such a reinstatement is feasible, which means in effect that the law permits such a program for the disposal of cottonoil which may be accumulated under the cottonseed support program.

However, the extent that cottonoil may ultimately be available from this support program is not known. There is no reliable opinion at USDA as to the quantity of cottonoil which will result from this program, but an official believes that as much as 20% of the cottonseed crop will be crushed into oil which will come to government account.

This is sheer guesswork.

There are some sources in trade who now believe that the implementation of the cottonseed program, where USDA will take over substantial quantities of cottonoil, will be an entering wedge for the previously rejected oil donation program. This is at best an interesting observation.

When the USDA accepted the cottonseed support program necessity, there was no discussion of disposal of the oil content which this program involves.

USDA has consistently supported Budget Bureau decisions to hold down CCC cash disbursements. That was the big item which killed the large oil donation program. The cottonseed oil accumulation program is a target for donations either for foreign or domestic programs.

**Feed Industry Reaction**

Touches of information here from trade and other sources now indicate that the feed industry would not like a program of donation of oil—particularly the big feed industry officials. It must be suspected that others in the feed industry would accept an oil donation program.

USDA opinion is that there is a huge over-all surplus of edible oils—with lard to develop later. These officials believe that a donation program should have been adopted to relieve the oil surplus condition.

It may be seen that the so-called "entering wedge" of cotton oil in government hands may precede a new donation program for edible fats for foreign and domestic programs.

## CENTRAL SOYA

(Continued from page 1)

margins in the soya division. The relatively new grain merchandising division enjoyed good growth and improved profits."

On Sept. 1, Central Soya took over (under a three-year lease with option to buy) the facilities of The Glidden Co.'s Chemurgy division which includes grain storage in Chicago, Seneca and Lockport, Ill., and Indianapolis, Ind.; soya protein, flour and lecithin production units, and research laboratories in Chicago; and soybean processing plants in Chicago and Indianapolis.

"In the opinion of Central's management, these new operations complement Central's existing facilities and should show satisfactory profits," the report stated.

Capital expenditures during the year totaled $5,415,430 and were paid entirely from earnings and depreciation. The company opened a new feed plant at Des Moines Oct. 2, 1958; completed construction of additional grain storage for 2,750,000 bu. at Marion, Ohio, and 5.8 million bushels at Decatur, Ind.; acquired grain storage facilities on the Tennessee River at Guntersville, Ala., and made substantial expenditures at all plants to improve operating efficiency and provide better customer service, the report said.

Inventories amounting to $15,678,086 were lower than a year earlier, principally due to a smaller soybean inventory at the end of the year, according to the report.

Central Soya is one of the nation's largest soybean processors and is a leading manufacturer of concentrate feeds for livestock and poultry. In addition to the new feed mill at Des Moines, the company has feed manufacturing plants at Chattanooga and Memphis, Tenn., Decatur, Ind., Marion, Ohio, Gibson City, Ill., and Harrisburg, Pa.

## CANADIAN FEEDER CATTLE EXPORTS UP

**WINNIPEG—Canadian feeder cattle exports to the U.S. during the week ended Oct. 4 reached a record high of 19,675 head, as compared with 19,593 in the previous week. Total 1958 exports of feeder cattle to the U.S. up to Oct. 4 were 249,943 compared with only 36,953 for the same period in 1957. While feeder cattle exports from Canada to the U.S. were at an all-time high, shipments to feedlots in Canada were down 5% for the same period.**

## CATTLE

(Continued from page 1)

fall of 1951. At that time choice slaughter steers averaged over $36 cwt., or nearly $10 higher than recent prices.

"Calves costing $34 in the West will have to bring $26 to $28 at market next fall to pay for feed and other expenses. This is a negative margin of $6 to $8 cwt. Good-to-choice yearlings on a long feed should break even on a negative margin of $1 to $3. If short-fed, they will have to bring cost price in order to pay expenses. Common-to-medium short-fed steers will have to bring $1 to $3 more than their cost prices in order to pay their room and board bill.

**Offsetting Factors**

"The supply of fed cattle may be about the same next year as it has been this year. Farmers and ranchers may hold back heifers, but there will be offsetting factors: (1) The 1958 calf crop in the range states was 3% larger this year than last. (2) Reduced calf slaughter, down one fifth in the first half of this year, may leave more yearlings for feeding and slaughter, as well as for restocking. (3) More stockers and feeders are being imported from Canada and Mexico. (4) Excellent pastures and feed crops this year tend to hold cattle on farms and ranches for a few extra months, but this tendency may be less pronounced next year.

"The supply of beef declined from 86 lb. per person in 1956 to about 78 lb. this year. Most of this decline has occurred in the past 12 months as farmers reduced marketing of cows. The beef supply may go down slightly in 1959, but it will remain far above the meager 56 lb. supplied to consumers in 1951.

"The supply of competitive meats, especially pork, will increase substantially in 1959. Consumers are getting only about 60 lb. of pork this year, the same as in 1954 and otherwise the smallest in 20 years. Next year they may get around 67 lb., the same as in 1955 and 1956. The supply of poultry meat, about 34 lb. per person this year, will probably be 36 or 37 lb. in 1959. The supply of lamb and mutton will be around 4 lb., the same as this year.

"Consumer demand for beef is not likely to increase much in 1959. Consumers may get more money, but pork will fill up the grocery sacks more often than in 1958. And, if families spend too much for other things, they will often pass up beef in search for cheaper foods.

"Prices of choice steers at Chicago have averaged close to $24 in each of the past five years. This year the average for the first nine months was almost $28. Most of the major price-lifting forces, however, now seem to be at or past their peak."

**NEW MILL OPENS**

GENEVA, MINN. — The grand opening of the Geneva Grain & Milling Co. was held recently. The new plant will combine facilities for grinding and handling grain with a modern egg cooling and sorting plant. The new plant replaces one lost by fire several months ago.

# THE FEED MARKETS

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## Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

### A AND D FEEDING OIL

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Boston:** Demand slow; supply ample; 400 D, 3,000 A 20¢ lb.; 300 D, 3,000 A 19½¢; 300 D, 1,500 A 16½¢; 200 D, 2,250 A 18¢; 600 D, 1,500 A 17½¢; 200 D, 750 A 14½¢; 75 D, 750 A 14½¢.

**Denver:** Demand fair; trend steady; supply good; 2,250 A, 300 D 21¢ lb.

**Chicago:** Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

**Minneapolis:** 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

### ALFALFA MEAL

**New Orleans:** Demand fair; trend unchanged; supply ample; $56@57; pellets $52@53.

**Philadelphia:** Demand and supply fair; 17% dehydrated $58.50.

**Ft. Worth:** Demand good; limited offerings nearby shipment; 17% protein dehydrated $55, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $57, rail; suncured $40, truck.

**Portland:** Demand slow; trend lower; supply ample; suncured, 15% $37; dehydrated $65.

**Minneapolis:** Firm trend; moderate demand; adequate supply but production is short; reground pellets $49, bulk; oiled reground pellets $51, bulk.

**Boston:** Demand slow; supply fair; dehydrated, 17% $57@58; suncured, 13% $47.

**Omaha:** Demand fair; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $43; sacked meal $49, Omaha basis.

**Los Angeles:** Demand fair; trend steady; supply ample; dehydrated meal, 17% protein, 100,000 A $51, bulk; dehydrated pellet meal, 17% protein, 100,000 A $49, bulk; suncured crumbles, 15% protein $43@44, bulk; suncured meal, 15% protein $41@42, bulk.

**Chicago:** Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $52.50@53; No. 1 fine ground $42.

**Cincinnati:** Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59.50@61.50.

**Denver:** Demand strong; trend up; supply ample; $42.

**Kansas City:** Demand fair; trend steady; supply adequate for demand; plants for the most part are now down or shutting down, much earlier than last year indicating that supplies will not be abundant; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival; reground pellets $48, sacked; oiled meal $50, sacked; pellets $42@43, bulk; 18% protein, 125,000 A meal $52, sacked; suncured alfalfa demand is slow, supplies adequate with the prices unchanged, No. 1 fine ground $34@35, No. 1 ½-in. $32@33, No. 2 ½-in. $28.50@29, sacked.

**Buffalo:** Demand fair; trend steady to higher; supply adequate; $60.50, Boston.

**Seattle:** Demand fair; trend steady; supply good; 15% protein suncured $43, delivered, truck loads; 136,000 A unit dehydrated $69, delivered, truck loads.

**Memphis:** Demand fair; trend steady; supply scarce; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $47.

**St. Louis:** Demand slow; trend steady; supply ample; 13% fine suncured $40; dehydrated, 17%, 100,000 units A $53.

### ANIMAL FAT (STABILIZED)

**New Orleans:** Demand slow; trend steady; supply adequate; 7½@8¢ lb., tank cars.

**Louisville:** Demand fair; trend steady; supply ample; bleachable fancy 7¾¢ lb.; white tallow 8¾¢ lb.; yellow grease 6¼¢ lb.

**Ft. Worth:** Demand fair; supply adequate; prime tallow, tank cars 7¾¢ lb.; drums 9¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

**Kansas City:** Demand slow from feed trade, fairly good from soap interests; trend steady; supply adequate; prime bleachable tallow 7¾¢ lb., tank car.

**Chicago:** Demand good; supply short; bleachable fancy tallow, tank truck or carlots 7¾¢ lb.; yellow grease 7¼¢ lb.

**San Francisco:** Demand fair; supply ample; bleachable fancy 8¼¢ lb.; yellow grease 6¾¢ lb.

### BARLEY FEED

**New Orleans:** Demand slow; trend unchanged; supply light; $59@60.

**Philadelphia:** Demand slow; supply fair; pulverized $44.75.

**San Francisco:** Demand fair; supply ample; rolled $60; ground $59.

**Portland:** Demand good; supply ample; trend unchanged; rolled $62; ground $60.

**Ogden:** Supply normal; rolled $48@53; whole $40@45.

**Boston:** Demand slow; supply adequate; $45.

**Los Angeles:** Demand fair; trend firmer; supply adequate; standard rolled $3.15 cwt., sacked; standard ground $3.15 cwt., sacked.

**Milwaukee:** Demand good; supply fair; needles 95¢@$1.10; ground screenings $24.

**Baltimore:** Demand quiet; supply adequate; $44.50.

**Chicago:** Demand quiet; supply adequate; $34.

**Seattle:** Demand and supply good; trend steady; $50 bulk, truck lots.

### BENTONITE (SODIUM)

**Chicago:** Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

**Denver:** Demand fair; trend steady; supply ample; $24.50.

**Cincinnati:** Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots; 80 granular $31.50; 200 mesh fine $31.

### BLOOD FLOUR

**Louisville:** Demand fair; trend steady; supply normal; $100@105.

### BLOOD MEAL

**New Orleans:** Demand fair; trend steady; supply light; $117@122.

**Louisville:** Demand fair; trend steady; supply ample; $100@105.

**San Francisco:** Demand good; supply tight; $7.25 a unit of ammonia.

**Portland:** Demand slow; supply ample; trend unchanged; $120.

**Ogden:** Supply normal; $115 in 100-lb. bags, f.o.b. Ogden.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; $7.75 a unit of ammonia.

**Chicago:** Demand and supply fair; $140, guaranteed 80% protein.

### BONE MEAL (STEAMED)

**New Orleans:** Demand fair; trend easy; supply normal; $84@89.

**Louisville:** Demand dull; trend steady; supply light; $85@90.

**San Francisco:** Demand good; supply ample; $75.

**Ft. Worth:** Demand fair; supply light; $85.

**Portland:** Demand slow; supply ample; trend unchanged; $95.

**Boston:** Demand and supply steady; $90.

**Cincinnati:** Demand fair; trend steady; supply ample; $95, Cincinnati.

**Los Angeles:** Demand and trend steady; supply adequate; imported $73.50 in 20-ton lots.

**Denver:** Demand good; trend steady; supply fair; $75, f.o.b. Bay Shore, Cal.

**Seattle:** Demand steady; trend firm; supply good; $85, ex-dock, truck lots.

**Buffalo:** Demand good; trend steady; supply ample; $90.

**Chicago:** Demand and supply fair; $75@85.

### BREWERS DRIED GRAINS

**Louisville:** Demand fair; trend easy; supply ample; off due to weakness in distillers grain; $52, off $1.

**Ft. Worth:** Demand fair; supply moderate; $54.40, October, delivered Ft. Worth.

**Philadelphia:** Demand slow; supply light; $58.50.

**New Orleans:** Demand good; trend steady; supply ample; $53@54.50.

**San Francisco:** Demand fair; supply ample; $54.

**Boston:** Demand good; supply short; 26% $58.50; 22% $58.

**Los Angeles:** Demand and trend steady; supply fair; $49 bulk, $53 sacked.

**Cincinnati:** Demand fair; trend steady; supply adequate; $53.

**Milwaukee:** Demand good; supply fair; $47.50.

**Chicago:** Demand fair; supply adequate; 26% $46.50@47.

**Buffalo:** Demand and supply fair; trend steady; $50.50, bulk, Boston.

**St. Louis:** Demand fair; trend steady; supply ample; $47.50.

### BREWERS DRIED YEAST

**Portland:** Demand steady; supply ample; trend unchanged; 8½¢ lb.

**Louisville:** Demand dull; trend steady; supply ample; 10@10½¢ lb.

**San Francisco:** Demand fair; supply good; 10¢ lb.

**Los Angeles:** Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

**Omaha:** 10½¢ lb.

**Boston:** Demand and supply steady; 10¢ lb.

**Chicago:** Demand good; supply limited; 10@11½¢ lb. in carlots; 10½@12½¢ lb., l.c.l.

**Denver:** Demand and trend steady; supply ample; 9¢ lb.; $180 ton.

**Buffalo:** Demand good; trend steady; supply fair; $10.65 cwt.

**Seattle:** Demand slow; trend steady; supply ample; $12 cwt.

**St. Louis:** Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

**Cincinnati:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**Pittsburgh:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New Orleans:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New York:** Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

**Milwaukee:** Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

### BUTTERMILK-CONDENSED

**Louisville:** Demand dull; trend steady; supply normal; $4.25 cwt.

**Philadelphia:** Demand slow; supply light; $4.25 cwt.

**San Francisco:** Demand fair; supply good; $5 cwt.

**Wichita:** Demand good; supply insufficient; $2.85 cwt. in barrels.

**New Orleans:** Demand slow; trend steady; supply normal; $4.25@4.30 cwt.

**Ogden:** Supply average; $4.40, 100-lb. drum.

**Boston:** Demand slow; supply light; 3½¢ lb.

**Los Angeles:** Demand and trend steady; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

**Chicago:** Demand fair; supply adequate; $3.25@3.50 cwt. in carlots.

### CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

**New York:** Crystals $15.28, flour $10.28.
**Buffalo:** Crystals $16.11, flour $11.11.
**Toledo:** Crystals $17.96, flour $12.96.
**Boston:** Crystals $16.63, flour $11.63.
**Limecrest, N.J.:** Crystals $10.50, flour $5.50.

### CALCIUM CARBONATE

**Cincinnati:** Demand fair; trend steady; supply adequate; $8@9 cwt.

**Los Angeles:** Demand and trend steady; supply ample; $10.25 cwt.

**Chicago:** Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

**Seattle:** Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

**Minneapolis:** Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

### CHARCOAL

**San Francisco:** Demand steady; supply ample; $141.

**Boston:** Demand and supply light; $100.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; hardwood poultry $156 sacked in less than ton lots, $144.40 sacked in ton lots.

**Chicago:** Demand quiet; supply adequate; poultry charcoal $106 ton in 50-lb. multiwalls.

### COCONUT OIL MEAL

**San Francisco:** Demand fair; supply ample; solvent $71; expeller $73.50.

**Portland:** Demand slow; supply ample; trend unchanged; $71.50.

**Los Angeles:** Demand slow; trend firmer; supply adequate; copra cake $71.50@72 bulk, $74.50@75 sacked.

**Seattle:** Demand good; trend strong; supply ample; $76, ex-dock, Seattle (Philippine production).

### COD LIVER OIL (FORTIFIED)

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 15½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Boston:** Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

### CONDENSED FISH SOLUBLES

**New Orleans:** Demand light; supply limited; trend steady; 50% solid $89@92, f.o.b. Gulf.

**New York:** Demand and supply fair; trend steady; 4⅝@5¢ lb., f.o.b. eastern shore.

**Los Angeles:** Demand and trend steady; supply adequate; 5¢ lb.

**Boston:** Demand active; supply scarce; 5¢ lb., nominal.

**Denver:** Demand fair; trend steady; supply good; dried $187.40.

### CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

**Minneapolis:** Feed $47.80, meal $83.80.
**Atlanta:** Feed $53.98, meal $89.98.
**Birmingham:** Feed $52.64, meal $88.64.
**Boston:** Feed $52.84, meal $88.84.
**Chicago:** Feed $41, meal $77.
**Cleveland:** Feed $49.14, meal $85.14.
**Denver:** Feed $51.51, meal $87.51.
**Ft. Worth:** Feed $49.96, meal $85.96.
**Indianapolis:** Feed $46.36, meal $82.36.
**Kansas City:** Feed $41, meal $77.
**Louisville:** Feed $48.21, meal $84.21.
**New Orleans:** Feed $51.20, meal $87.20.
**New York:** Feed $52.43, meal $88.43.
**Norfolk:** Feed $51.71, meal $87.71.
**Philadelphia:** Feed $52.02, meal $88.02.
**Pittsburgh:** Feed $49.96, meal $85.96.
**St. Louis:** Feed $41, meal $77.

### CORN OIL MEAL

**Louisville:** Demand slow; trend easy; supply normal; $50.45, off $2.

**Cincinnati:** Demand fair; trend lower; supply adequate; $49.

### COTTONSEED OIL MEAL

**Wichita:** Demand slow; supply ample; 41% old process $63.

**New Orleans:** Demand slow; trend weaker; supply ample; $66@67.

**Philadelphia:** Demand and supply fair; $71.

**Louisville:** Demand fair; trend steady; supply ample; old process $63.70, new process $62.70.

**San Francisco:** Demand good; supply ample; expeller $57.90; solvent $62.70.

**Portland:** Demand slow; trend lower; supply ample; $60.

**Ogden:** Supply normal; 41% $63@68.

**Ft. Worth:** Demand improved; supply adequate; carlots, 41% old process $58@59; solvent $57.60@58; pellets $2 additional; cottonseed hulls $16.

**Atlanta:** Demand good; trend strong; supply ample; 41% $62.

**Omaha:** Demand poor; supply ample; 41% solvent $60.20, bulk, Omaha basis.

**Chicago:** Demand and supply fair; hydraulic $53.50; solvent $52.50, basis Memphis.

**Boston:** Demand fair; supply adequate; $72.

**Los Angeles:** Demand fair; trend steady; supply adequate; domestic expeller meal, 40% $50, bulk; domestic solvent meal, 40% $58@59, bulk.

**Cincinnati:** Demand fair; trend steady; supply adequate; old process $65.

**Denver:** Demand and supply good; trend steady; $62.

**Kansas City:** Demand slow; trend steady to stronger with freight rate cuts to Southeast causing stronger trend; supply adequate; old process meal $54.50@55, sacked, Memphis; solvent meal $53.50@54.

**Buffalo:** Demand fair; trend steady; supply adequate; $72, Boston.

**Seattle:** Demand fair; trend steady; supply good; $69, truck lots, 41% expeller process.

**Memphis:** Demand good; trend higher; supply plentiful; prime 41% protein, old process $55.50; new process, 41% solvent $54.50.

**St. Louis:** Demand fair; trend higher; supply ample; solvent $61.

### CURACAO PHOSPHATE

**New York:** Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

### D ACTIVATED ANIMAL STEROL, POWDERED

**New York:** Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

**Cincinnati:** Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

**Kansas City:** Demand fair; trend steady; supply ample; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

### D ACTIVATED PLANT STEROL, POWDERED

**Chicago:** Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

### DEFLUORINATED PHOSPHATE

**Tupelo, Miss.:** Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

**Wales, Tenn.:** Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

**Houston:** Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

**Coronet, Fla.:** Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

**Cincinnati:** 18% phosphorus $81; 13% phosphorus $64.98, f.o.b. Cincinnati.

### DICALCIUM PHOSPHATE

**Texas City, Texas:** 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

**Columbia, Tenn.:** Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

**Chicago:** Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

**Bonnie, Fla.:** Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

**Minneapolis:** 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

**Trenton, Mich.:** Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

**Cincinnati:** 18½% phosphorus $92@93.

**Denver:** Demand fair; trend steady; supply ample; $89.50, Denver.

**Portland:** Demand steady; supply ample; trend unchanged; $115.

### DISTILLERS DRIED GRAINS

**Philadelphia:** Demand slow; supply light; $67, darks and lights.

**Louisville:** Demand fair; trend easy; supply improving; bourbon grains: light $53@55, dark $55@57; unchanged, solubles $77.

**San Francisco:** Demand fair; supply ample; solubles $85.

**Boston:** Demand fair; supply improved; light $62.50, dark $63.50.

**Cincinnati:** Demand poor; trend steady; supply adequate; by truck $58.50.

**Buffalo:** Demand and supply fair; trend lower; $59, bulk, Boston.

**Seattle:** Demand good; trend firm; supply ample; $67, truck lots.

### DRIED BEET PULP

**Portland:** Demand good; supply ample; trend unchanged; $50.

**Ogden:** Supply average; $38@42.

**New Orleans:** Demand fair; trend steady; supply ample; $60@61.

**San Francisco:** Demand good; supply fair; $40.40.

**Ft. Worth:** Demand fair; supply sufficient; carlots, 50-lb. papers; O-N-D plain or molasses $58.

**Boston:** Demand fair; supply ample; $56.50.

**Atlanta:** Demand slow; trend steady; supply ample; $63.

**Los Angeles:** Demand and trend steady; supply adequate; molasses $42.75@42.90, bulk.

**Milwaukee:** Demand good; supply fair; plain $49.50; molasses $49.50.

**Buffalo:** Demand and supply fair; trend steady; $56.50, Boston.

**Seattle:** Demand slow; trend steady; supply good; $45, delivered, carlots.

### DRIED BUTTERMILK

**Louisville:** Demand slow; trend steady; supply normal; 11@11½¢ lb.

**New Orleans:** Demand slow; trend steady; supply ample; $10.50@11 cwt.

**San Francisco:** Demand fair; supply ample; 11¢ lb.

**Ogden:** Supply normal; $7.25, 100-lb. bag.

**Los Angeles:** Demand and trend steady; supply tight; 11¢ lb.

**Boston:** Demand good; supply light; 11¢ lb.

**Chicago:** Demand and supply fair; medium acid $10.25; sweet cream $10.25@10.50 cwt. in carlots.

**Milwaukee:** Demand and supply fair; $10 cwt.

**Buffalo:** Demand good; trend steady; supply limited; $11.35 cwt.

### DRIED CITRUS PULP

**New Orleans:** Demand fair; trend steady; supply ample; $52.50@56.50, f.o.b. Florida.

**San Francisco:** Demand good; supply fair; meal $54.

**Atlanta:** Demand good; trend steady; supply practically exhausted; $51.50.

**Boston:** Demand slow; supply light; $49.50, f.o.b. shipping point.

**Los Angeles:** Demand good; trend steady; supply limited; orange pulp $41, bulk; lemon pulp $39, bulk.

### DRIED SKIM MILK

**New Orleans:** Demand slow; trend steady; supply normal; $11.50@12 cwt.

**Philadelphia:** Demand slow; supply light; $12.50 cwt.

**Louisville:** Demand slow; trend steady; supply normal; 11@11½¢ lb.

**Ogden:** Supply average; $15.15, 100-lb. drum.

**San Francisco:** Demand and supply fair; 13½¢ lb.

**Portland:** Demand good; supply ample; trend unchanged; 13¢ lb.

**Minneapolis:** Steady trend; good demand; limited supply; 10¾@11¾¢ lb.

**Milwaukee:** Demand and supply fair; $11 cwt.

**Boston:** Demand and supply fair; 12¢ lb. in ton lots.

**Los Angeles:** Demand and trend steady; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

**Cincinnati:** Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.

**Chicago:** Demand good; supply light; $10.50@10.75 cwt. in carlots.

**Buffalo:** Demand fair; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

### DRIED WHEY

**New Orleans:** Demand good; supply adequate; trend steady; $5.50@5.75 cwt.

**Philadelphia:** Demand slow; supply light; $6.25 cwt.

**Louisville:** Demand slow; trend steady; supply light; 6@6½¢ lb.

**San Francisco:** Demand steady; supply good; $5.50 cwt.

**Portland:** Demand good; supply ample; trend unchanged; $7 cwt.

**Ogden:** Supply normal; $6.90, 100-lb. bag.

**Ft. Worth:** Demand fair; supply adequate; carlots, standard $6, October; $6.25, October, ton lots, f.o.b. warehouse, Ft. Worth.

**Minneapolis:** Steady trend; fair demand; fair supply; $5.50 cwt., producers' points for regular and partially delactosed.

**Chicago:** Demand fair; supply adequate; $5.25@5.50, f.o.b. plant.

**Boston:** Demand steady; supply plentiful; 5¾¢ lb., f.o.b. plant.

**Los Angeles:** Demand and trend steady; supply adequate; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.

**Cincinnati:** Demand fair; trend steady; supply adequate; $6.15 cwt.

**Kansas City:** Demand fair; trend firm; supply lighter; $5.50 cwt., producers' plants for regular or partially delactosed.

**Seattle:** Demand steady; trend firm; supply good; $6.40 cwt., ex-warehouse, l.c.l.

### FEATHER MEAL (HYDROLYZED)

**Ft. Worth:** Demand good; supply moderate; 85% to 87% protein $90@95, f.o.b. trucks, north Texas plants.

**Atlanta:** Demand fair; trend steady; supply ample; $93.

**Boston:** Demand steady; supply light; $85, f.o.b. shipping point.

**Los Angeles:** Demand and trend steady; supply fair; $1.25 a unit of protein.

**Salisbury, Md.:** Good demand; limited supply; $93, bulk, f.o.b. producers' plants.

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### FISH MEAL

**New Orleans:** Demand light; supply limited; trend steady; menhaden 60% $143@145; scrap $134@135, f.o.b. Gulf.

**Louisville:** Demand slow; trend steady; supply light; $165.

**San Francisco:** Demand fair; supply ample; $2.20 a unit of protein.

**Portland:** Demand slow; supply ample; trend unchanged; $2.20 a unit.

**Ogden:** Supply average; $2.20 a unit, f.o.b. Coast; 65% $151@153.

**Ft. Worth:** Demand good; supply limited; sardine $2.30 a unit protein, f.o.b. California.

**Atlanta:** Demand good; trend strong; supply limited; 60% $158.

**Minneapolis:** Firm trend; fair demand; tight supply; 60% West Coast meal $170, f.o.b. Minneapolis; 70% herring $2.30 a unit, West Coast.

**Boston:** Demand active; supply short; $138@140.

**Los Angeles:** Demand better; trend firmer; supply tighter; local production, 60% protein $2.25 a unit.

**Cincinnati:** Demand fair; trend steady; supply adequate; $164.

**Milwaukee:** Demand and supply fair; 60% $157.

**Denver:** Demand fair; trend steady; supply good; $2.15@2.20 a unit of protein, f.o.b. West Coast.

**Chicago:** Demand good; supply very tight; eastern menhaden fish meal, 60% protein, none available; Gulf, none available; western blended, 60% protein, $2.25 a unit of protein; delivered Midwest points $170; Northwest herring-salmon blend, none available; Canadian herring, 73% protein $2.25 @2.30 a unit of protein, subject to production.

**Buffalo:** Demand good; trend higher; supply very scarce; 60% protein menhaden $170 bulk, $175 sacked (nominal).

**Seattle:** Demand good; trend easy; supply limited; $2.40 a unit protein, ex-dock, Alaska herring.

### HAY

**Wichita:** Demand poor; supply ample; prairie $8@10, alfalfa $10@12.

**Philadelphia:** Demand dull; supply fair; $32@35.

**Louisville:** Demand dull; trend weak; supply normal; any variety, No. 1 $35, No. 2 $32; straw $20; straw scarce and hay plentiful; local handlers using northern hay; local hay poor.

**Portland:** Demand good; trend firm; supply limited; $28.

**Ogden:** Supply average; $1 bale; $15 ton in field; $18 in barn.

**Ft. Worth:** Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

**Boston:** Demand and supply steady; No. 2 timothy $40@42; No. 2 red clover $43@45.

**Los Angeles:** Demand less urgent; trend steady; supply ample; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@31; U.S. No. 2 green $27@29; U.S. No. 2 $24@26.

**Cincinnati:** Demand poor; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

**Denver:** Demand steady; trend weak; supply good; alfalfa, baled, third cutting $25, first cutting $24, delivered in Denver.

**Seattle:** Demand slow; trend firm; supply good; alfalfa, U.S. No. 2 green $31, delivered, truck lots.

### HOMINY FEED

**New Orleans:** Demand slow; trend steady; supply adequate; $48@49.50.

**Louisville:** Demand slow; supply normal; $49.

**Boston:** Demand cautious; supply ample; $53.50.

**Cincinnati:** Demand good; trend steady; supply somewhat limited; $48.

**Milwaukee:** Demand good; supply fair; $44, sacked, Milwaukee; nothing for October; November-December $1 less.

**Kansas City:** Demand fair; trend steady; supply tight with local suppliers several weeks behind in orders; yellow $34 bulk, $3.50 more for sacks; white $1 less.

**Chicago:** Demand fair; supply adequate; $44.50@45.

**Buffalo:** Demand and supply fair; trend steady; $51, bulk, Boston.

**Seattle:** Demand fair; trend steady; supply good; $52, carlots.

**Memphis:** Demand nil; trend steady; supply ample; white $47, yellow $47.

**St. Louis:** Demand fair; trend steady; supply adequate; yellow $43.

### LINSEED OIL MEAL

**Wichita:** Demand slow; supply ample; 34% $74.50.

**New Orleans:** Demand slow; trend steady; supply adequate; $67.50@68.

**Philadelphia:** Demand and supply fair; 34% $72.50.

**Louisville:** Demand fair; trend steady; supply normal; old process $75.90, new process $68.90.

**San Francisco:** Demand fair; supply ample; $64.

**Portland:** Demand slow; supply ample; trend unchanged; $75.

**Ft. Worth:** Demand slow; supply adequate; carlots, 34% solvent: October $74.50 @75, November-December $75.50@76; pellets $2.50 premium.

**Boston:** Demand and supply light; $72.50.

**Los Angeles:** Local production, 29% protein, no offerings.

**Minneapolis:** Steady trend; moderate demand; adequate supplies; solvent $50.50 spot, bulk; October-December $51.50; expeller $57 bulk.

**Omaha:** Demand fair; supply ample; 34% solvent $56.30, bulk; 32% old process $62.80.

**Cincinnati:** Demand poor; trend steady; supply adequate; new process $68; old process $73.

**Milwaukee:** Demand good; supply fair; old process $67.50; new process $61.

**Denver:** Demand fair; trend steady; supply good; $69.

**Kansas City:** Demand slow; trend steady; supply adequate; solvent meal $50.50, bulk, Minneapolis; old process $57.

**Chicago:** Demand fair; supply adequate; solvent $54.50@55; expeller $61.50, basis Minneapolis.

**Seattle:** Demand fair; trend steady; supply limited; $78, 34% protein, carloads.

### MALT SPROUTS

**New Orleans:** Demand fair; trend steady; supply limited; $45@46.50.

**Boston:** Demand and supply limited; $42.50.

**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 $47.

**Milwaukee:** Demand good; supply fair; odd weights $42, even weights $43.50.

**Chicago:** Demand fair; supply adequate; No. 1 $43.50@44.

### MEAT AND BONE MEAL

**Wichita:** Demand fair; supply sufficient; 50% $112.50, f.o.b. plant; 55%, no quotations, no offerings.

**New Orleans:** Demand fair; trend steady; supply average; $111@112.75.

**Louisville:** Demand slow; trend easy; supply good; $95@100.

**San Francisco:** Demand good; supply fair; $2.10 a unit of protein.

**Portland:** Demand slow; trend weak; supply ample; $2.15 a unit.

**New York:** Demand fair; trend upward; supply tight; 50% $87.50, 55% $95, bulk; 50% $90.50, 55% $98, sacked.

**Ogden:** Supply average; $119, in 100-lb. bags.

**Ft. Worth:** Demand slow; supply light; meat and bone, 50% $100@104, f.o.b. or delivered Ft. Worth.

**St. Paul:** Weak trend; poor demand; ample supplies; 50% meat scraps $100@105.

**Omaha:** Demand fair; supply ample; $110.

**Boston:** Demand slow; supply adequate; $1.55 a protein unit, converted 50% $90.

**Los Angeles:** Demand slow; trend weaker; supply ample; 50% protein $2.10@2.15 a unit, bulk.

**Cincinnati:** Demand good; trend steady; supply fair; 50% meat and bone scraps $97.50.

**Denver:** Demand slow; trend steady; supply good but raw cost up; 50% $95 bulk, $98 bags.

**Kansas City:** Demand slow; trend steady; supply adequate but light as kills continue to lag; 50% meat and bone scraps $102.50.

**Chicago:** Demand fair; supply tight; 50% protein $105@110.

**Buffalo:** Demand fair; trend steady; supply ample; 50% meat scraps $97.50 bulk; $102.50 sacked.

**Seattle:** Demand good; trend steady; supply fair; $110, ex-warehouse, 50% protein.

**St. Louis:** Demand fair; trend steady; supply adequate; $113.

### MILLFEED

**Minneapolis:** Buyers moved in to replenish inventories as feed demand improved, moderating running time joined to boost price; bran $34, middlings $33, flour midds. $38@39, red dog $41.

**Kansas City:** Demand good; trend steady to stronger; supply tight, especially for sacked feeds; bran $32.25@33, shorts $33.25 @34, sacked; bran $27@27.75, shorts $28.75 @29.50, middlings $28.50@29.25, bulk.

**Wichita:** Demand very good, mostly for mixed cars; supply adequate; basis Kansas City: bran $32.75@33.25, shorts $32.75 @33.25; bran and shorts advanced $1.25, compared with the preceding week.

**Omaha:** Demand good; supply ample; sacked bran $32.50; sacked gray shorts $34.50; bulk standard midds. $29.50.

**Ft. Worth:** Demand good; trend stronger; supply limited; carlots, burlaps, prompt, bran $42, gray shorts $42.50, delivered Texas common points; $1.50 higher on bran and $2 higher on shorts compared with previous week.

**Chicago:** Millfeeds pursued an irregular pattern in the central states during the week ending Oct. 22. Observers said the market was drifting rather aimlessly, with demand rather slow but supplies not pressing. Bran and standard midds. showed slight gains, while heavier milling offals eased slightly. Quotations: bran $35.50@37.50, standard midds. $36.50, flour midds. $46@47, red dog $47@49.

**St. Louis:** Demand fair; trend steady; supply ample; bran $37.75@38.25, shorts $38.75@39.25, sacked; bran $32.50@33, shorts $34.50@35, middlings $33.50@34 bulk.

**Cincinnati:** Demand fair; trend higher; supply adequate; bran $42.50; middlings $42.50.

**Boston:** Demand spotty; supply irregular; bran $46.50, middlings $47.50.

**Buffalo:** Millfeeds moved higher under demand from medium and large mixers. They had overstayed the market and had to replenish their inventories. However, they bought for spot only. Bulk bran and middlings strengthened under the demand and the spread between sacked and bulk items narrowed. Sacked bran ended the week up $2, bulk was up $3, sacked middlings rose $1 and bulk gained $2. Red Dog held unchanged. Quotations Oct. 22: bran $39.50 @41, standard midds. $40@42, red dog $48 @48.50. The bulk differential on both bran and middlings narrowed from $5.50@7 to $4.50.

**New York:** Demand good; trend upward; supply fair; bran $48@48.50; standard midds. $48.50@49.50.

**Philadelphia:** Demand spotty; supply fair; bran $46.50, standard midds. $47, red dog $66.

**New Orleans:** Demand fair; trend steady; supply adequate; bran $43.25@44, shorts $43.50@44.25.

**Louisville:** Demand fair; trend stronger;

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supply normal; bran $44.10, mixed feed $44.50, shorts $45.60, middlings $42.80.

**Memphis:** Demand fair; trend lower; supply ample; wheat bran $40.50, shorts $41, standard midds. $41.

**Seattle:** Demand good; trend easy; supply ample; $39, delivered, common transit points, carlots.

**Portland:** Demand slow; trend lower; supply ample; $38.

**Ogden:** Supply average; to Utah and Idaho: red bran and mill run $39, middlings $44; to Denver: red bran and mill run $46, middlings $51; to California: red bran and mill run $46.50, middlings $51.50, f.o.b. San Francisco and Los Angeles.

**Denver:** Demand and supply good; trend steady; bran $33, shorts $33.75.

**San Francisco:** Demand fair; supply ample; millfeed $44.50; red bran $46.

**Los Angeles:** Demand slow; trend weak; supply ample; standard mill run $41.50, bulk; red bran $44@45, bulk.


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### MINERAL FEED

**Portland:** Demand slow; supply ample; trend unchanged; $42.

**Wichita:** Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95; 100-lb. bags $90, f.o.b. plant.

**Ogden:** Supply normal; $115 in 50-lb. blocks; $103, granular, 50-lb. bags.

**San Francisco:** Demand steady; supply good; all-purpose with iodine $70.

**Ft. Worth:** Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $28, phosphorus 2% $78 (all in 50-lb. paper bags).

**Sioux City:** 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

**Denver:** Demand fair; trend steady; supply plentiful; $108.80.

**Seattle:** Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $35, ex-warehouse.

### MOLASSES

**New Orleans:** Demand fair; trend steady; supply ample; 15¢ gal., tank cars and trucks; 660-lb. customers' drums $9.62.

**Louisville:** Demand slow; trend easy; supply ample; 13¾¢ gal., tank car lots.

**San Francisco:** Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

**New York:** Demand and supply good; trend steady; blackstrap 17¢ gal., tank cars, tank wagons, f.o.b. New York.

**Ft. Worth:** Demand fair; supply sufficient; blackstrap 15¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $32.35, seller's market price on date of shipment.

**Boston:** Demand slow; supply plentiful; 18¼¢ gal. in tank cars.

**Atlanta:** Demand good; trend steady; supply limited; citrus $22.50, bulk, f.o.b. Florida producing points.

**Minneapolis:** Weaker trend; moderate demand; ample supplies; 13¾@14¢ gal., New Orleans; $34, f.o.b. terminal.

**Los Angeles:** Demand and trend steady; supply adequate; $25 bulk, f.o.b. tank cars; $25.25 bulk, f.o.b. tank trucks.

**Cincinnati:** Demand fair; trend steady; supply adequate; 14¢ gal., New Orleans.

**Milwaukee:** Demand fair; supply good; blackstrap 14¢ gal., f.o.b. New Orleans.

**Denver:** Demand and supply fair; trend steady; 13¾¢ gal., New Orleans.

**Kansas City:** Demand slow; trend steady; supply adequate; 13¾¢ gal., tank car, New Orleans.

**Buffalo:** Demand and supply fair; trend steady; 17½¢ gal., f.o.b. Albany.

**St. Louis:** Demand fair; trend steady; supply ample; 14¢ gal., New Orleans.

### NIACIN

**New York:** Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

### OAT PRODUCTS

**Philadelphia:** Demand slow; supply fair; pulverized white $52.50; Canadian oat feed $26; domestic $24.

**Louisville:** Demand slow; trend steady; supply normal; reground $21.30, rolled $34.30, feeding $78.30, pulverized $49.30, crimped $63.30.

**Ft. Worth:** Demand improved; supply sufficient; oat millfeed $42.70; reground oat millfeed, 2% protein, sacked $21.70.

**Minneapolis:** Steady trend; fair demand; ample supplies; feeding rolled oats $77.50@78; feeding oatmeal $68.50; pulverized $43.50; crimped $54; reground $14@15.

**Los Angeles:** Demand fair; trend steady; supply adequate; pulverized, local production $60.

**Cincinnati:** Demand poor; trend steady; supply adequate; reground oats $22; pulverized white oats $48; rolled oats $83.

**Chicago:** Demand fair; supply adequate; reground oat feed $14; fine ground feeding oatmeal $70; feeding rolled oats $79@80.

**Seattle:** Demand fair; trend steady; supply ample; $49, bulk, truck lots.

**Memphis:** Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $19.25.

### OYSTER SHELL

**New Orleans:** Demand good; trend steady; supply plentiful; $17@17.50.

**Louisville:** Demand good; trend steady; supply ample; in 80-lb. bags $22.85, 50-lb. bags $23.10, 25-lb. bags $25.35.

**San Francisco:** Demand fair; supply ample; local $15, eastern $26.

**Portland:** Demand fair; trend unchanged; supply ample; western $34, eastern $38.50, granite grits $26, shell flour $24.

**Los Angeles:** Demand and trend steady; supply ample; $14.80.

**Boston:** Demand and supply steady; $25 in paper.

**Cincinnati:** Demand fair; trend steady; supply adequate; $23.45.

**Seattle:** Demand and trend steady; supply good; eastern $35, carlots.

### PEANUT OIL MEAL

**Milwaukee:** Demand and supply fair; 26% $42.

**Atlanta:** Demand slow; trend steady; supply limited; 45% $56.

### PEAT MOSS

**Philadelphia:** Demand slow; supply fair; $2.80 bale, f.o.b. pier.

**San Francisco:** Demand fair; supply ample; $2.75 bale.

**Portland:** Demand slow; supply ample; trend unchanged; $3.25 bale.

**Boston:** Demand and supply steady; $3.15 bale in carlots.

**Los Angeles:** Demand fair; trend steady; supply ample; Canadian 6.1 cu. ft. bale $3.85.

**Chicago:** Demand fair; supply short; $3.60 @3.70 standard 7½ cu. ft. bale.

**Seattle:** Demand poor; trend easy; supply good; $2.70 bale, truck lots.

### POTASSIUM IODIDE, U.S.P.

**Cincinnati:** Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

**Chittenango, N.Y.:** Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

### POULTRY BY-PRODUCTS

**Ft. Worth:** Demand good; supply moderate; 55% protein $100@105, f.o.b. north Texas plants.

**Boston:** Demand fair; supply tight; $97 @100, f.o.b. shipping points.

**Los Angeles:** Demand and trend steady; supply adequate; $1.85@1.90 a unit of protein.

**Atlanta:** Demand fair; trend steady; supply ample; $108.

**Salisbury, Md.:** Good demand; limited supply; $100 bulk, f.o.b. producer's plant.

### RIBOFLAVIN

**New York:** Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 10 gm./lb. mixtures, freight prepaid or paid to destination.

**Cincinnati:** Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 10 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

### RICE BY-PRODUCTS

**San Francisco:** Demand fair; supply ample; bran $40; polished $49.

**Ft. Worth:** Demand fair; supply very scarce; carlots, rice bran $35@36, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

**Atlanta:** Demand fair; trend strong; supply limited; bran $45, nominal.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; bran, California production, high fat content $48.

### SCREENINGS

**Minneapolis:** Steady trend; demand slow; very light offerings; lights $1@8, mediums $9@20, heavies $21@30; Canadian bulk $17; Canadian ground $25; flaxseed screenings $35; oil type flaxseed screenings $43, basis 15%.

**Buffalo:** Demand good; trend higher; supply adequate; ground and sacked $31.50, New York, lake and rail; unground, bulk $25.25, New York.

**Cincinnati:** Demand fair; trend steady; supply adequate; ground screenings $34; malt house $27, both sacked; Canadian $25, bulk.

**Chicago:** Demand fair; supply adequate; ground grain screenings $28.50; Canadian, bulk $19.

### SOFT PHOSPHATE WITH COLLOIDAL CLAY

**Atlanta:** $20.40@20.67.
**Buffalo:** $25.31@25.45.
**Chicago:** $24.77@24.90.
**Cincinnati:** $23.47@23.60.
**Des Moines:** $25.23@25.35.
**Kansas City:** $24.88@25.
**Memphis:** $22.20@22.47.
**Minneapolis:** $25.92@26.06.
**Philadelphia:** $24.32@24.95.
**St. Louis:** $24.14@24.27.

### SORGHUMS

**Ft. Worth:** Demand fair; supply sufficient; carlots, bulk, No. 2 yellow milo $2.12 @2.15, delivered Texas common points.

**Los Angeles:** Demand steady; trend firmer; supply adequate; milo $2.30 cwt., bulk.

### SOYBEAN OIL MEAL

**Portland:** Demand slow; trend lower; supply ample; $44.50; November-December $43.

**Ogden:** Supply average; $81@86.

**New Orleans:** Demand slow; supply adequate; trend steady; $70@71.

**Philadelphia:** Demand and supply fair; trend unsettled; 44% $47, bulk, Decatur.

**Ft. Worth:** Demand fair; supply sufficient; carlots, 44%: $69.50 this week through December, $71.50 January-March coupled; 50% protein: $77 this week through December, $79 January-March coupled; truck meal 44% $67 October, $64.50 November-December.

**San Francisco:** Demand fair; supply ample; $76.50.

**Atlanta:** Demand fair; trend weak; supply ample; 44% $62.

**Denver:** Demand fair; trend weak; supply good; $65.

**Seattle:** Demand steady; trend weak; supply ample; $78, carlots.

**Memphis:** Demand light; trend lower; supply plentiful; prime 44% solvent $56.50.

**Minneapolis:** Good demand for spot; ample supplies; price expected to stabilize; 44% $51, bulk, Minneapolis; 50% $61.50, bulk, Minneapolis.

**St. Louis:** Demand slow; trend lower; supply ample; 44% $57.50.

**Omaha:** Demand poor; supply ample; 44% $51.90, Omaha basis.

**Cincinnati:** Demand fair; trend lower; supply adequate; $47.50, bulk, Decatur.

**Milwaukee:** Demand good; supply fair; $47, bulk, Decatur.

**Kansas City:** Demand fair; trend steady; supply plentiful; meal for Kansas City and western shipment $44, bulk, Decatur; unrestricted meal $46.50@47.

**Decatur:** Losses of $1.50@5 ton were registered by soybean oil meal the week ending Oct. 22. Demonstrating that ample quantities are available currently, following pre-harvest tightness of nearby meal, current shipment supplies are selling at a discount under meal for future delivery. Some traders believe the decline has about run its course for the present, however. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $47; eastern restricted $45.50@46; 50%, bulk, unrestricted, basis Decatur $55; eastern restricted $54.

**Los Angeles:** Demand slow; trend weaker; supply ample; $72.50@73.50, bulk.

### TANKAGE

**Wichita:** Demand fair; supply sufficient; 60% $115, f.o.b. plant.

**New Orleans:** Demand fair; trend steady; supply light; $122@125.

**Louisville:** Demand fair; trend easy; supply ample; 60% $100@105.

**Ft. Worth:** Demand slow; supply light; 60% digester $102@104.

**St. Louis:** Demand fair; trend steady; supply adequate; $113.

**Cincinnati:** Demand and supply fair; trend easy; 60% digester $107.50.

**St. Paul:** Weak trend; poor demand; ample supplies; 60% digester $103@108.

**Omaha:** Demand fair; supply ample; $112.50.

**Chicago:** Demand and supply fair; 60% protein $107.50@112.50.

**Kansas City:** Demand light; trend steady; supply adequate for demand but small; 60% digester $107.50.

### VITAMIN E FEED SUPPLEMENT

**Rochester, N.Y.:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

**New York:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

**Cincinnati:** Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

### WHEAT GERM MEAL

**New Orleans:** Demand good; supply adequate; trend strong; $107@109.

**Buffalo:** Demand and supply fair; trend steady; commercial grade $90, f.o.b. Buffalo.

**Chicago:** Weaker trend; reduced demand; adequate supplies; $90.


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## MICHIGAN

(Continued from page 1)

Saginaw; and James Erskine, Howell (Mich.) Cooperative.

Stanley Odle, district sales manager, Allied Mills, Inc., Ft. Wayne, Ind., speaking on the subject "Merchandising Bulk Feeds," told the audience that bulk feed handling is one of the biggest changes that has come about in the feed industry in many years.

"For the past five to 10 years we have been content to refer to bulk handling feeds as a trend," he said. "However, I do not feel that we can consider bulk feeds a trend any longer. Bulk feed so far as the feed dealer and the livestock and poultry producers are concerned is now a definite reality—not a trend."

Mr. Odle presented statistics from a recent survey which showed that 24% of the Michigan retail feed dealers offered bulk distribution of feed in 1958, as compared with 8% two years ago—a three-fold increase. The survey showed that while less than 10% of the total feed volume at present moves in bulk, dealers predict it will be 30% two years hence. Within the next year, 26% of the Michigan dealers who do not at present have bulk feed facilities of any kind, plan to make at least some type of bulk feed installation. (The complete text of Mr. Odle's address and other details of the survey results will appear in a coming issue of Feedstuffs.)

### Outside Selling

J. F. McLimor, merchandising manager in charge of salesmen and dealer training in a 17-state area for Ralston Purina Co., St. Louis, emphasized the importance of outside selling in the scheme of feed distribution. Bulk feed handling is coming along fast, he said, and with competition growing rapidly, dealers must get into bulk handling or get out of business.

As farms become fewer and larger, the farmer is now a businessman-technician and he requires and demands businesslike services commensurate with his stature, Mr. McLimor pointed out. A good Corn Belt farmer now has an average investment in his land and equipment of $75,000—he is big business—and the suppliers who get his business must think as he does and be equipped to serve him.

A successful retail feed business cannot be run by telephone or from a desk, Mr. McLimor said. "Orders are where the odors are." Dealers must get out on the farms and feedlots and talk to their customers. "To sell 'em, see 'em and service 'em," was Mr. McLimor's advice. Big feeders will be sold and serviced by dealers that are mechanized, specialized and capitalized. "You can't be in business today with yesterday's tools and expect to be in business tomorrow," he stated.

Mr. Smith, in his president's message to the membership, cautioned feed and grain dealers to keep pace with the rapid changes now taking place in the farm economy.

"These things concern us, because as agriculture prospers, so will we prosper," he said. "With an integrated agriculture coming into being, it behooves us to be alert to these facts. Agriculture will be integrated! The economic forces creating this change are more dynamic than the sociological forces resisting it. It just plain will be! We must meet it in our own industry: more services and new services to cater to that prosperous commercial farmer; more capital to finance always-better plants and the assets necessary for providing the increased services; keener management to tie together the ingredients of a successful agribusiness; higher capacity plants and the consolidation of existing plants—these are all part of the essentials of the immediate future.

"Better trained employees are needed to utilize the technology available. Get out of the things in which you are not, or cannot become, efficient, effective and profitable. Push those things in which sufficient potential volume does exist for you to be competitive. (And this to those would-be-bankers): Watch your credit extension; I suspect some of you should have small loan counters in your business places.

"Be prepared to advance in integrated agriculture, rather than fear it. Be among those directing this change. The future belongs to those who create it."

### Research

Dr. J. A. Hoefer, department of animal husbandry, MSU, listed for the delegates what he termed, "in my judgment—without any attempt to list in order—the more significant recent research developments."

His list follows:

**1. Enzymes**—Work at a number of western stations indicates that the utilization of barley may be improved by either the addition of enzymes or by the water soaking treatment. Enzymes from a variety of sources have been used in this research, and in some reports barley has approached the value of corn fed to either broilers or turkeys. Research in the enzyme area holds great potential, but at the moment it appears to be most promising with high fiber feeds such as barley. Addition of enzymes to swine pre-starter has not had wide practical acceptance. Benefits are obtained only with very early weaning.

**2. Antibiotics**—There seems to be some shift toward antibiotic combinations and to the use of generally lower levels. This seems to be a matter of economics more than of improved performance. Some reports indicate that some of the new antibiotics such as erythromycin and oleandomycin are increasing growth in poultry under conditions where some of the older antibiotics fail to give a response. Erythromycin has been reported to be unpalatable to swine, although South Dakota results indicate improved gain and feed efficiency. Hygromcin has been tested with conflicting results. Results show it to be an effective anthelmintic, but the possibility of an appetite depressant effect with a consequent growth retardation has been suggested. Farm reports concerning hygromycin have been good.

**3. Pelleting**—Pelleting complete mixed rations decreases dust, increases feed density, reduces waste, makes for easier handling and generally increases both rate and efficiency of gain. Offsetting the above advantages is the cost of pelleting. Pelleted feeds are being used in an ever-increasing volume because of the many benefits for both ruminants and non-ruminants. The biggest response is obtained when high-fiber feeds are pelleted. Hence, for swine and poultry, barley and high-fat rations are improved much more than high-corn rations. Michigan State results with pelleted rations show a much greater percentage response with the higher oat levels. For cattle and sheep some phenomenal results have been reported with pelleted hay (or other high fiber) rations. This is countered somewhat by the increased cost of pelleting the high fiber combinations.

It is interesting to note that Colorado workers have reported a high incidence of rumen parakeratosis in lambs fattened on pelleted rations. It is suggested that this condition might be associated with either the fineness of grind or with a contaminant from the pelleting machinery.

In many areas the volume of pelleted feed is limited by the availability of pelleting equipment. There is some research going on in this area as well as with hay pelleting equipment.

**4. Minerals**—The many recent reports concerning calcium, phosphorus,, zinc, iron, copper, molybdenum and magnesium are indications of the tremendous amount of interest in this area. Mineral requirements are being re-evaluated and interrelationships studied very carefully. It seems safe to say there will be many changes in mineral recommendations in the next few years. For anemia prevention in young pigs the use of an injectable iron dextran has given excellent results. While older methods when properly administered will give good results at probably lower cost, the injectable method has so consistently maintained higher hemoglobin values and produced heavier pigs with less scouring that it is now widely accepted.

**5. Tranquilizers**—Experiments are being conducted with all classes of livestock with many different tranquilizers. At the moment there is much conjecture and speculation, but much remains to be learned. Positive results have been reported with both sheep and cattle. Results with swine and poultry are inconclusive.

**6. Hormones**—Research continues in this fascinating area where there is so much potential. The estrogenic hormones are being widely combined with antibiotics and the tranquilizers. Compounds which influence the thyroid gland are being studied with steers, lactating cows and young pigs. The results being reported are quite variable.

Willard Wilson Roy Luce

**KENT APPOINTEES—Willard Wilson has been appointed district sales manager and Roy Luce director of sales training for Kent Feeds, Muscatine, Iowa, announced William Schafenacker, sales manager. Mr. Wilson has been with Kent for 14 years, serving as office sales administrator for the past four years. Mr. Luce has been with Kent for the past eight years, holding a district sales manager's job for the last four.**

**7. Confinement feeding**—Research resulting in improved ration formulation has made it possible to raise swine from birth to market without the benefit of pasture. Gains are actually faster in dry lot and almost as efficient. Good performance, high priced land and labor, continuous corn, multiple farrowing, automation and integration are a few of the factors contributing to the trend toward confinement rearing.

**8. Disease**—The experiences of workers at Notre Dame, Nebraska and North Carolina working with disease-free animals open up some entirely new avenues of research in animal production. Work at Minnesota, Iowa, Michigan State University regarding antibody absorption is a major contribution regarding our knowledge of disease resistance, immunity and response to stress.

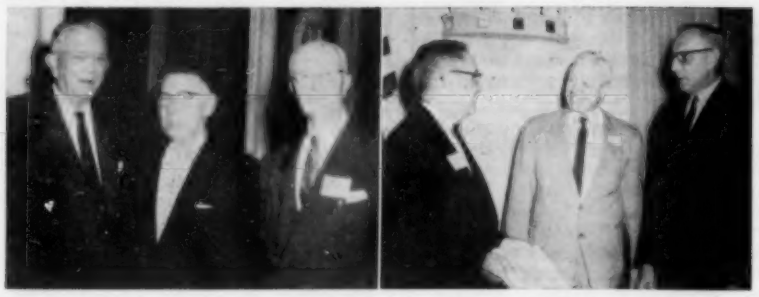
**9. Specialized formulation** — Progress is being made in the direction of formulation for a particular and specific situation and not just for the non-existent average animal and average set of conditions.

Dr. Hoefer said this list is by no means complete. He also pointed out the many notable advances in amino acids, fat additives, systemic insecticides and many others including linear programming. As the list of additives and ingredients lengthens the electronic computer becomes more and more important to the feed manufacturer, he said.

Dr. Larry Boger, department of agricultural economics, MSU, presented an outline of the 1959 farm picture. Planning and merchandising for 1959 was the subject of R. H. Slemmons, National Cash Register Co., Kalamazoo.

More than 250 delegates and their ladies attended the annual banquet, which was followed by a fast moving vaudeville program in the auditorium. The convention closed with a luncheon in the Big Ten Room with an inspirational sales talk by Joseph Burger, Pasadena, Cal.

**TEXAS CONFERENCE—Some of the speakers at the recent 1958 Nutrition Conference at Texas A&M College are shown here. First picture (back row, left to right): Steele Wright, Texas Farm Products Co., Nacogdoches, Texas; Ben C. Wormeli, Texas A&M College; H. W. Bruins, Quaker Oats Co., Barrington, Ill.; A. A. Camp, Texas Agricultural Experiment Station at Gonzales, and Dr. C. W. Carlson, South Dakota State College. In the front row (left to right) are: Dr. J. H. Quisenberry, Texas A&M; Paul Ray, Chickasha (Okla.) Cotton Oil Co.; Prof. J. W. Sorenson, Jr., Texas A&M; Prof. A. C. Magee, Texas A&M, and R. A. Rasmussen, Peter Hand Foundation, Chicago. In the second picture are several Texas A&M staff members and representatives of the feed industry who participated in the conference. They are (left to right): W. D. Nusbaum, Ralston Purina Co., Ft. Worth; Ben E. Schmitt, Texas Feed Manufacturers Assn., Ft. Worth; Maurice Johnson, Staley Milling Co., Kansas City; R. D. Lewis, director of the Texas Agricultural Experiment Station, Texas A&M; G. M. Watkins, dean of the Texas A&M School of Agriculture; Lloyd Larson, Midwest Feed Manufacturers Assn., Kansas City, and Dr. J. R. Couch, Texas A&M. (A report on the conference appears on page 90.)**



**CONTROL MEETING—These two pictures were taken at the recent 50th anniversary convention of the Association of American Feed Control Officials. In the first photo are three men who participated in a banquet program in observance of the group's golden anniversary. Left to right are Thomas C. Law, Law & Co., Atlanta, who "reminisced" for industry; W. C. Geagley, control official from Lansing, Mich., and Dr. J. W. Kellogg, retired control official who served in Pennsylvania and elsewhere. In the second photo, Bruce Poundstone (left), Lexington, Ky., the new AAFCO secretary, is receiving papers turned over by L. E. Bopst (right), College Park, Md., who was secretary for 31 years. Looking on is W. B. Griem, Madison, Wis.**

## NEPPCO

(Continued from page 6)

farmers, processors and buyers find it advisable to integrate, they should be permitted to do so. And when the farmers decide not to integrate it should be possible for them to find markets, secure credit, meet competition and survive as independents when they desire to do so. Only when there is evidence of monopoly in restraint of trade, or need for an enabling act to permit producers to bargain with integrators, should legislation be contemplated."

Dr. Hood said an independent producer may find it difficult to find a market in areas where vertical integration has become dominant unless he does his own processing and marketing.

"He may sell at a roadside stand, at a curb market, in a market house, or direct to small stores or consumers. He may seek help from his cooperative in marketing the product. He may join other independents and form a bargaining or processing cooperative. Or he may find an opportunity to contract with a processor if his volume is big enough to interest the processor," Dr. Hood said.

**Credit Problem**

The credit problem for the independent operator was pointed out by Dr. Hood as the big one. If the independent is to survive, he said, he must be able to obtain adequate credit from commercial banks and other credit agencies. Interest in this problem is now being indicated by the agricultural commission of the American Bankers Assn., Dr. Hood said, and the group may be helpful in interesting its membership in making sound loans to independent poultry operators.

Integration from the point of view of the dressing plant operator was discussed by James Mendelson, Maplewood Poultry Co., Belfast, Maine. When demand for poultry increased following World War II and production stepped up, his firm felt "the sharp cutting edge of competition."

He said the firm had few choices as to what it could do. It had to put its growers under contract and call the shots if it was to survive.

The vastly increased production has brought the need for more promotion in the industry, he said. He called for increased financial support of promotional organizations.

"It's unfortunate that we haven't an effective method of curbing production so it can be in a little better balance with what we can sell at a profit," he stated. "It looks as though we'll have to try to set a few dollars aside when there's a chance to cushion us when the selling price fails to bring the production cost."

**Merchandising**

Merchandising poultry products was also stressed at the meeting in a discussion on the subject, "Are We Selling Our Products? How?"

John Hargreaves, Caroline Poultry Co., Federalsburg, Md., one of the speakers, said that during the five-year period from 1952 to 1957 production costs were reduced 1¢ lb. each year. In the same period another 3½¢ lb. was extracted from operating margins.

"In many areas this challenge was met or counter-attacked by some form of integration, improved genetics, nutrition and better management all along the line," he said. "But can we continue to show these kind of savings in production costs? How much farther can we hammer down expenses and, regardless of the savings we effect and the efficiencies we reach, continue to market our products at even cheaper prices?"

He said what is needed is a program of producing for a market specifically rather than producing "helter-skelter to whomever will take the product." Poultry products aren't sold today, he said, they are "moved" from the producer to consumer.

To learn how to sell the product rather than move it will require finances from the industry, he said. Plants must provide facilities within themselves to handle properly volume expected from the plant and money must also be given for promotion of the industry.

**4-Point Program**

Fred Lang, Nemarrow Advertising Agency, Vineland, N.J., said money is needed, but it is not enough. He outlined four points which he said are necessary prerequisites to a successful poultry industry.

1. Improved quality in eggs and poultry meat.

2. Recognition of the community of interest in the industry on the marketing and merchandising levels as well as the production end. This interest must transcend local and state lines.

3. This regional identity of interest must be developed to the point where it can be manifested in the promotion of common branded products of quality.

4. Consumer education on the value of eggs and poultry in the diet must be stepped up and broadened by the Poultry & Egg National Board to rebuild consumption levels and go on to new peaks.

"These four points can be revolutionary in their application," he said. "They may be reflected in central packing and grading. They may bring the development of a regional identified brand with a corresponding program of promotion and advertising. They will certainly be reflected in price premiums for quantity production of high quality products."

The need of the industry is to sell poultry products with greater efficiency, and this could possibly mean high price levels, he said, but it is more likely that improvement in poultry farm income will come from the assumption of some of the functions now performed by non-industry firms.

"In the same way that one kind of integration has enabled the broiler industry to produce meat at a price level that would have been ruinous a few years ago, another kind of integration can enable the egg and poultry meat industry of the Northeast to discover new profits," he said.

**Example of Progress**

An example of the progress made in the broiler industry in recent years were two broilers presented by Harold Weisberg, meat bird grower and fancier from Hyattstown, Md., to Dr. Alfred Van Wagenen, managing director of NEPPCO, at the exposition.

Mr. Weisberg's latest flock of 150 crossbred broilers—mixed male and female—averaged 3 lb. each at the end of 48 days of growing. Eviscerated and ready to cook, the birds weighed more than 2 lb. He said taste tests show that such rapid growth does not affect either taste or tenderness.

Best feed conversion of the birds was 1.85 lb., compared to the 2.50 lb. conversion for the average broiler, Mr. Weisberg said.

## POTENTIATING

(Continued from page 6)

cin and Aureomycin have responded in a similar fashion to diet alterations and/or the addition of terephthalic acid.

"However, antibiotic blood serum levels resulting from potentiated diets have been found to be higher with Terramycin," Dr. Reynolds reported.

**Application Filed in 1957**

The recent patent was assigned to Pfizer on an application filed in March, 1957, by Pfizer investigators Robert E. Kent, now manager of synthetic anti-infective research at the firm's Groton, Conn., plant, and Dr. E. H. Peterson, who has since joined the veterinary science staff at the University of Arkansas. A great many Pfizer researchers were also credited by Dr. Reynolds as having assisted in the work on antibiotic potentiation.

Increasing the efficacy of antibiotics through dietary adjustment of divalent ions such as calcium and also through the addition of terephthalic acid will offer the poultry industry a really effective new way to control such infections as chronic respiratory disease and synovitis, Dr. Reynolds stated.

He noted that poultry rations are of particular concern in these antibiotic potentiation studies since the calcium requirement of poultry is relatively high as compared with that of other farm animals.

## West Virginia Names Area Sales Manager

NEW YORK—John O. Frahm has been appointed district sales manager in the Chicago area for the multiwall bag division of West Virginia Pulp & Paper Co. Mr. Frahm is a native of St. Joseph, Mo., and was formerly a West Virginia sales representative at Kansas City.

Announcement of the appointment was made by Tom L. Jones, regional sales manager. Mr. Jones explained that sales of the multiwall bag division's new stretchable paper in the Chicago area have grown so rapidly that the appointment was necessary to provide the trade with improved service.

Mr. Frahm, with 15 years of experience in the multiwall field, will cover metropolitan Chicago, most of northern Illinois and the Milwaukee area of Wisconsin.

## Central Soya Dividend

FT. WAYNE, IND. — Directors of Central Soya Co., Inc., Ft. Wayne, have declared a quarterly dividend of 50¢ per share on the capital stock of the company, payable Nov. 15, 1958, to stockholders of record at the close of business Oct. 24, 1958.

## Cyanamid Discusses Expanded Programs

NEW YORK — Key sales people from the agricultural division, American Cyanamid Co., are meeting during the months of October and November to discuss the company's expanded agriculture programs. These meetings highlight over-all, long-range objectives aimed at increasing farm income, the company said.

B. F. Bowman, director of marketing, in a speech on the present and future of agriculture, predicts still greater growth opportunities in all fields. He said he believes the present strong demand for food and other agricultural products will continue as our population and national income continue to increase. In the face of limited farm acreage, continued improvement in yields per acre are required to insure adequate supplies of agricultural products. This will necessitate increased use of fertilizers, pesticides and other farm chemicals.

Mr. Bowman quotes figures from the USDA estimating that 1958 net farm income, after costs, will be at least 15% higher than was experienced in 1957. He expresses confidence for 1959 and bases his optimism on the fact that the nation's personal income can be expected to rise to new records as recovery proceeds. Both cattlemen and crop growers are sharing the present prosperity.

## More Light Turkeys Tested for Pullorum

WASHINGTON — Increased numbers of heavy white and light breed turkeys were tested for pullorum disease during September than the same month a year earlier, the U.S. Department of Agriculture reports.

Heavy white breed turkeys tested totaled 73,379, up 76% from a year earlier. Light breed turkeys tested totaled 94,372, an increase of 95% over the previous September. Other heavy breeds tested totaled 161,637, a decrease of 16%.

During the months of July through September, 1958, the testings of heavy white breed turkeys were up 61% over the same period of 1957. Other heavy breed testings were down 3%, and light breed testings were up 130%.

The report on chicken testings showed an increase in testing of chickens for supplying broiler hatching eggs, but a drop in testings of egg-type chickens.

In the states for which comparisons were available, 2,643,740 chickens for supplying broiler hatching eggs were tested. This was an increase of 14% over September, 1957. Testings during July through September totaled 5,868,661, up 12% over the same period a year earlier.

Egg-type chickens tested during the month of September totaled 1,243,658, down 1% from September, 1957. The number tested during July through September totaled 2,343,823, compared with 2,291,285 during this period in 1957—an increase of 2%.

## MARKETS

(Continued from page 2)

an important freight rate reduction within the Southern Freight Association. This is expected to affect the transportation of ingredients as well as mixed feeds in the territory quite extensively.

### Central States

Formula feed sales remained steady at a fairly high level during the week ending Oct. 22. October has been a good month for feed business so far, observers say, and is likely to remain so to the end.

The healthy rate of sales has been maintained despite the trend to low-

er prices, it is pointed out. Corn, soybean meal, and other ingredients, reflecting abundant harvests, have enabled manufacturers to reduce their prices for the last few weeks. During a period of lowering quotations, the tendency is for buyers all along the pipeline to hold off on purchasing as long as possible to take advantage of the lowest possible prices.

The softness of markets seems to be approaching an end, some observers believe. With more stable ingredient prices, finished feed prices are expected to harden up, and the prospects are for inventory building to begin.

## South Central

An improvement in formula feed demand has been shared by most feed manufacturers this week. The improvement has not been extensive enough to result in added mill running time but it has caused some shortages in mill warehouse stocks.

Although poultry feeds, except for mixing concentrates, are somewhat draggy, nearly all other lines are showing gradual increases. Regardless of stepped up hog marketings, demand for hog feeds shows no sign of slackening. Dairy feeds are reported to be on the wanted list again after a long absence. The big jump in business, however, is in cattle feeds now moving in good quantities.

Mill spokesmen say that their buyers are beginning to accumulate inventories. They consider that prices are not likely to decline a great deal more from this point and they can handle normal inventories without much risk.

## California

The consumption of formula feeds this past week was on the slow side due mainly to a period of very hot days and warm nights.

There was no apparent change in egg prices with large at 44@44½¢, medium at 34½@35¢, and small at 24@24½¢. The turkey market showed a cautious undertone with prices at the ranch holding at 20@20½¢ for young toms, and 24@24½¢ on young hens. Ice-packed fryers were quite plentiful and prices dropped to 28½@29¢.

There seemed to be no shortage of grains or feed ingredients, and pricewise, values held quite steady with the possible exception of soybean meal which declined some $3@3.50 ton.

Cattle on feed for marketing in California as of Oct. 1 showed an increase over a year ago of some 3%. However, pasture and range conditions remained very high at 85% versus the 10-year average of 75%.

## Mountain States

The general feed business in the Rocky Mountain area has greatly improved over the same period a year ago.

On Oct. 1, 1958, a total of 228,000 head of cattle and calves was being fattened in Colorado feedlots. This number is 26% more than the 181,000 head on feed Oct. 1 a year ago, and compares with 234,000 head in feedlots July 1 this year.

Turkey poults.—Heavy breed poult production during September, while down seasonally, was up 59% from September, 1957.

Production of hay and feed crops has been good the past summer and, together with the carryover of 1957 hay, roughage feeds for winter will be adequate throughout Colorado.

## Ohio Valley

Sales of formula feeds this week in the Ohio Valley were reported holding up very well, considering the Indian summer weather and harvesting activities. While volume was off slightly compared with previous weeks, tonnages were said to be well ahead of those recorded a year earlier. Furthermore, the outlook for better business during coming months is considerably better than it was at this time last year.

A considerable increase in receipts at area stockyards was noted this week as farmers began marketing larger numbers of the animals they have been fattening during recent weeks. Because of the active retail demand, prices generally held steady, to insure profitable cash returns. Better than average restocking earlier this year assures increased stockyard receipts during coming months, with a corresponding good volume of fattening feeds being required. Demands for both chick and broiler feeds were good this week, and increased egg settings also were noted.

Manufacturers reported a decided switch from mashed feeds to pellets and crumbles, because of the easier handling and more complete consumption by the livestock. One manufacturer said that more than half of the volume being produced is now in pellet or crumble form, and is increasing steadily.

Running time at area mills generally held steady this week with two-shift, five-day operations. At several plants, added weekend operations were necessary to keep order backlogs to a minimum.

## Pacific Northwest

This week's feedstuffs market trading was marked by continued cutting of some prices under pressure of large available supplies and hand-to-mouth buying interest.

Soybean meal listings slipped another $4 ton while meat and bone meal prices dropped $5 ton to post the largest decline. Wheat millfeed values were down $2@2.50 ton, but suncured alfalfa meal and copra meal prices were around $1 ton higher. Whole corn listings declined $2.25 ton with barley prices closing 50¢ lower.

Quotations for whole milo gained 50¢ during the week. Other items sold unchanged in slow dealings, major dealers reported.

Formula feed business maintained a good volume despite increased marketing of turkeys. Laying and broiler mashes moved at a good pace with dairy feeds rating a seasonally good volume at most quarters. Continued mild weather throughout most sections of Oregon and Washington continued to restrict heavy feeding needs.

Fed steer prices advanced 25@50¢ cwt. higher during last week's North Portland livestock market trading with choice hitting a recent high of $28.

Government cold storage reports showed that October 1 turkey storage holdings were the largest of record.

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